WIN
25 copies of Atomix
only in the
EXPRESS SUMMER GIVE-AWAY
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Issue 95 • 1 September 1990 • 58p

NEW COMPUTER EXPRESS

BRITAIN'S BIGGEST SELLING COMPUTER WEEKLY

AMIGA

- Viva multimedia
- Puzzle out Plotting
- Quick shortcuts

ST

- Deluxe Paint at last
- Colour Calamus
- Harley biking game

PC

- Teletext on screen
- The ultimate laptop?
- Copying files faster

ARCHIMEDES

- Spreadsheet preview
- Screen grab tips

CPC

- Console analysis

Specialist columns for:
PCW•C64•MSX•QL•BBC
SPECTRUM•SAM•PD

WHO'S THE BEST AMIGA ARTIST?

The best of the Amiga Animation Festival

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⑫

20 C.C.625

Saddam Hussein's men spotted using British high security coding devices

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28 value-packed pages in
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We ask both sides about the new computing laws

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Computer ends Grace Darling's heroic era

A computer is to replace the keeper at Longstone Lighthouse in Northumberland – scene of Grace Darling's famous and heroic rescue of shipwrecked sea-goers over 150 years ago.

At the end of next month the current keepers Gordon Medlicott and Ken Rowley will be replaced by an automatic system which will control the lights. It will be able to detect the weather and react accordingly.

In 1838 the steamer *Forfarshire* carrying 60 passengers broke up on the treacherous rocks of Farne Island. The then keepers, Grace Darling and her father, sailed out through terrible seas in a rowing boat to save 11 survivors. The story has enthralled millions of children ever since.

Gordon Medlicott said: "There can be no Grace Darlings after September. Microchips cannot row out to the rescue and they cannot make those human decisions to risk danger which meant the difference of life and death to those survivors Grace and her father rescued against all the odds."

He said technology had made the coastlines a safer place but added: "No technology could substitute for what they did that day." While working on a different lighthouse Medlicott saved a drowning man, for which he was given a bravery award. ■

• *Grace Darling: no computer heroism.*

Atari version joins Amiga and PC

DELUXE PAINT OUT ON THE ST

Deluxe Paint, the hugely popular paint, animation and printing package is finally available for the ST.

A program of the same name has been available for the Amiga and PC for some time and is held in high esteem by owners of those machines. Indeed, Commodore is offering the program to new Amiga owners.

Deluxe Paint ST was not written by the team which produced the Amiga version, but publisher Electronic Arts says it's just as good.

The software includes 999 animation buffers, each one being able to hold 999 frames. It can read Amiga IFF format files as well as all recognised ST graphics formats. Airbrushes which give colour mixing are included, as are proportional fonts and full font editing, halftone and colour poster printing, and real time magnification on all tools are also available to the user.

Deluxe Paint will run in 512K of memory, and for STE owners there is an extended palette.

• **Deluxe Paint:** ***on the ST at last.***

Electronic Arts claims that the ST package will rival "those of the best selling and most highly regarded paint program on the Amiga, *Deluxe Paint III* ."

Electronic Arts will be offering the program at an introductory price of £49.99 on its release in late September. This is £10 cheaper than the full £59.99 price which comes into effect on December 1.

For more information contact Electronic Arts on 0753 49442. ■

• Watch out for the chance to win a copy of Deluxe Paint, coming soon.

• **Powermonger:** **Populous** ***follow up.***

Hey Bullfrog

Fans of Bullfrog's perplexing strategy game _Populous_ are soon to be treated to the follow-up title, _Powermonger_.

It's out on the ST and Amiga in about six weeks time and has already been hailed as a winner by those lucky enough to see preview copies. *Powermonger* takes the player to a living world where each individual has an occupation, a home and a level of intelligence. It's your job to conquer new territories and generally be horrible to the people already living there.

It's all drawn in 3D vector graphics (*à la Populous*), there are 200 territories to conquer through bribery, corruption and dishonesty. It's published by Electronic Arts and will cost £29.99. ■

Highly defensive TV

High Definition Television is to receive funding from the United States Defense Department because it is seen as being in their national interest. Costs for the £1 million project will be shared with American firm, Zenith.

Zenith sees HDTV as being the standard for computer monitors, workstations and commercial television. ■

Russians abandon guns for Spectrums

A factory which once churned out military hardware for the Soviet armed forces has been converted into a computer workshop.

The plant in Udmurtia, Russia, will now be making Spectrum-compatible machines for Eastern schools.

The project has been taken on by a number of companies working under the banner Arsenalzhevsk.

The machines are unique by Soviet standards because they are relatively affordable.

"Our customers have a limited supply of money and cannot afford to buy PCs," said Moscow representative Dimitry Potapov. "Our computers, which come with educational software, are a good alternative. Sales are brisk and demand is high," he added.

The Z80-based 8-bit machines cost about £100 and will be sold to schools. ■

Secret code systems banned from export but fall into Iraqi hands

BRITISH COMPUTER SYSTEM SHIELDS IRAQ'S SECRETS

British-made computer equipment has fallen into the hands of the Saddam Hussein's regime and is being used to protect high-level Iraqi military communications.

As a result, the UN forces will now find it virtually impossible to use electronic spying techniques to anticipate Iraqi movements during the Gulf crisis. Encoded messages produced by the system would take NATO's most powerful computers a lifetime to decipher.

Britain leads the field in the application of computers to the coding of messages, and has done so since the Second World War. The secret techniques employed are jealously guarded.

Quite how Iraq obtained the equipment remains a mystery, and the nature of the device itself is shrouded in secrecy.

Iraq's possession of the equipment was only discovered by chance.

Robert Matthews of *The Sunday Correspondent* reported that an unpublished photograph, taken months ago, showed Iraqi army officers and the encoder shown clearly in the background.

All exports of encryption technology must be passed by the Government's Communications Headquarters based in Cheltenham, and it seems highly unlikely that the Iraqi acquisition was officially sanctioned.

A GCHQ spokesman told *Express*: "We do not comment on anything of an operational nature. Operational in this sense is defined as classified."

Such a sophisticated encoder could be as small as a microprocessor and would be easy to smuggle through customs. Iraqi diplomats may have used their privileges to export the equipment without official sanction, or an Iraqi 'front' company could have been registered with a British address and used to acquire the technology.

Alternatively, sophisticated software could have been transmitted via modem to Iraq over the standard telephone network – *PKZip*, an encoding program banned from export by the American government became freely available as shareware by this route.

Mike Jones, a technical representative from Cairntech, a British company that specialises in encryption techniques, told *Express* : "Modern encoding devices come in both hardware or software form and can be used to code and decode voice and data transmissions. Data sent from one computer to another can be encrypted during transmission."

The encoder is thought to work by converting the written or spoken word into a digital signal. That signal is combined with a 'keystream' which comprises a series of numbers keyed in by the operator. Because the numbers are randomly introduced, it is virtually impossible for a third party to crack the code.

This process is further complicated by the fact that the coded messages are then looped back on themselves to be used as their own keystream, forming yet another layer of code. ■

• Saddam Hussein: keeping his communications secret by using British computers.

Variations on Enigma

Britain has had a long, and successful history of in encryption-decryption techniques. GCHQ itself is one of the largest and most complex spying stations in Europe.

During World War II, the code and cipher school at Bletchley Park was set up to break the German Enigma codes. Among the scientists who worked there were Stuart (later knighted) Milner-Barry and the legendary Alan Turing.

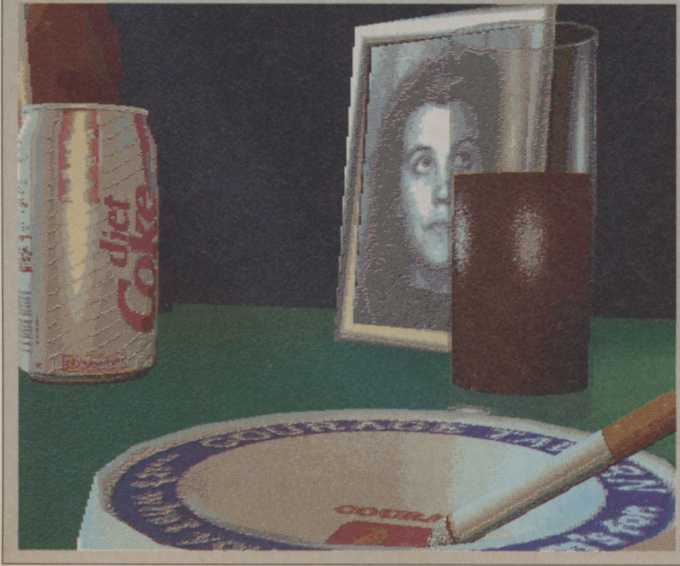
The team, on what was known as Project Ultra, worked day and night intercepting and analysing German communications until they cracked the code. Winston Churchill always maintained that the success of Ultra was instrumental in the winning the war.

Turing is still widely quoted in the computing and encryption-decryption; at the age of 24 he published a paper which mapped out the theoretical basis of computing. His work on Project Ultra was carried out in his early thirties. Success could not save him from a tragically early death in 1952 at the age of 42.

America bans export of anti-hacking equipment

The US National Security Agency (NSA) recently banned the sale of sophisticated anti-hacking equipment because its export would affect their own spying activities.

The NSA is known to keep tabs on commodity, troop and personnel movements by hacking into other countries' signals. Like the Iraqi-held equipment, the system encodes telephone communication signals using massive numbers so that the NSA computers would be kept so busy decrypting data that any recovered would already be out of date.



Picture the scene

The Edinburgh Festival played host once again last week to the annual Amiga Animation Festival – with an A3000 up for grabs to the best artist.

In all there were 11 prize-winning animations but the free computer went to Eugene Messina with his *Main Video* animation (pictured left). That featured smart imagery of a simple desktop and imaginative camera work over mundane articles such as a Coca Cola can, alarm clock and framed photograph.

It was all generated on an Amiga using *Turbo Silver* and recorded in five second sections onto a VHS recorder using a modulator. ■

• For a report on the animation festival turn to page 46.

• Top quality colour, at a price.

Millions of colours

Sublimation dye printers can now offer superb quality 16,000,000-colour images from CAD drawings with new PC-based software.

Synergy's new *Imageprint* can print any *AutoCAD* image, and combine several onto one sheet. Combined with Mitsubishi printers it can be used on a PC, freeing the workstation.

Prices begin at £5,000. Further information on 0707 278608. ■

Shops lobby for £1 increase in cassette prices

GAMES BUYERS FACE BUDGET PRICE RISES

Speculation is growing that a number of top games software publishers are considering a £1 price hike for their budget games.

At present most budget games cost £2.99. However some publishers, distributors and dealers feel this price does not leave enough room for worthwhile profits.

At present the debate is occupying the minds of senior business people in the software trade – most budgeteers have yet to come to a decision.

Last week though the National Association of Computer Retailers called for a new price point of £3.99. The dealers say they are not making enough money from low cost software. This follows the liquidation of a number of software retailers during a poor summer. Dealers are also blaming inflation rates and the new business tax.

Chairman Vic Purnell told *Express*: "It's unfair in this financial climate. Budget games make up about 80 per cent of our business but we're not really making any money from them. That's no good for games players. If we're not making money we might as well give up and then there will be nowhere to buy software. This is in the interests of consumers and those of us in the trade."

Not surprisingly software publishers are not keen to commit themselves yet although it is understood that a few major players will be making announcements of price increases in the near future.

At Kixx – US Gold's label – Roger Swindells said no action would be taken as a response to the dealer requests. He said that any decision would be "our business". "We'll be making announcements at the leisure show and until then we've no comment to make," he said.

At Encore, boss Steve Wilcox said he would be discussing the matter with trade partners and "looking carefully at the situation".

Mastertronic's budget product manager Andrew Wright commented: "I'd like to see a new price but we'll have to wait and see what our competitors are doing. We also have to decide whether or not the consumer will tolerate such a price rise." He said any hike would not affect old games which would stay at £2.99. Some are still priced at £1.99.

Cult's Tony Huggard and CodeMasters' Mike Clarke both felt the £2.99 price was fair to everyone. Nevertheless, trade sources insist that prices will be forced up before Christmas.

But any changes will not be a concerted industry wide effort. It is illegal for any business associations to fix prices. ■

RASTAN
RASTER RUNNER
MASTERTRONIC plus
NEW RELEASE
AMSTRAD 464/664/6128
encore

• Budget scene: cheap software prices going up?

• This intriguing device has them all hopping around in the land of Macintosh desktop publishing. It's a combination of a hand-held scanner and a character recognition device and is called The Typist.

Essentially, all the text you scan is chucked straight through the keyboard buffer and the result can then be edited on-screen. Scanning text in the past has been a cumbersome experience since the computer always sees it as an image rather than as text.

It's being sold by retail chain Computers Unlimited which will be 'making a big splash' when it arrives in two weeks time. No price has been fixed yet. Call 081-200 8282. ■

16-bits budget for success

When it comes to the ST, PC and Amiga, budget games have yet to fully assert themselves. Still, Digital Integration will this week launch three games for less than a fiver.

Targhan from Silmarils is a violent hack 'n' slash affair, *Fast Lane* is, hardly surprisingly, about fast cars and *Finally On Safari* from Infogrames involves taking photographs of big game in Kenya.

All three were full price games 18-months ago but now they are £4.99 under the Action Sixteen label. ■

• 486 power, if you can afford it.

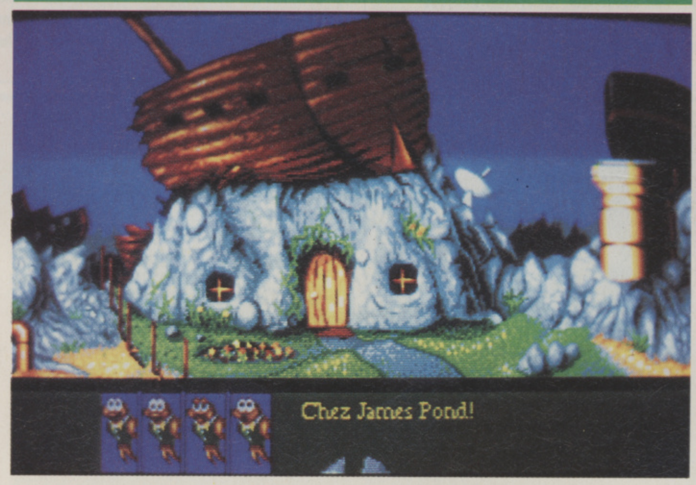
Power with the price

Elonex has released an extremely powerful EISA-based 486 PC. Priced at £4,245, the 25MHz computer offers 8Mb of memory.

It is suited either as a network server or high-power graphics workstation. The EISA system allows ordinary PC cards to be used alongside the new fast 32-bit devices.

Elonex is on 081-452 4444. ■

JAMES POND – LICENCE TO GILL



• He's fearless, he's clever, he's ozone friendly and he's a fish with a mission. All sorts of missions in fact, so long as they're ideologically sound, and don't involve murdering innocents.

No, his brief only includes retrieving radioactive canisters and preventing oil slicks from harming endangered species. What fun.

James Pond – Underwater Agent comes from Millennium on the ST and Amiga. His mission is to protect lovely fishy things from nasty pollution. Had to happen sometime – an ecologically friendly shoot-'em-up. At least this comes with "brilliant graphics, an amazing 12 levels of play and smooth parallax scrolling",. It's out at the end of October for £24.99. ■

• CD-ROM goes portable with a new, battery-powered laptop-compatible drive, which the manufacturer claims to be the world's first.

The two-inch high Grid drive uses standard compact discs it uses are capable of storing up 550Mb of data – equivalent to over 200,000 pages of type written text.

The drive comes as clip-on accessory to the 386-based Gridcase 1530, and is also compatible with the 286-based 1520 series of laptops.

Price for the kit is £1,750. For more information call Grid on 0372 60266. ■

Mad Hacker approached to wipe criminal records

PRISONERS OFFER CASH TO HACKER

Jailed hacker Nicholas Whitely has allegedly been asked to wipe the criminal records of several fellow prisoners.

While on a four month sentence for computer crime – he was caught hacking in to university systems – Whitely was approached by top criminals in the prison yard. They offered him large amounts of money to erase their police records following his imminent release from Brixton prison.

Whitely – dubbed the Mad Hacker – was also asked to get hold of information which would have been of use to the villains once on release. It appears that millions of pounds were mentioned although Whitely turned down the offer on the grounds that "there's no point in having millions of pounds if you're in jail."

Computer crime is not confined to Great Britain of course. Last week 13 suspected hackers were arrested in New York in connection with the illegal downloading of a $1.2 million C program developed by AT&T.

Several games and other programs were also allegedly stolen from Washington's City University.

The group was said to have met monthly at a '2600 Club' run by Eric Corley, editor of a magazine dedicated to hacking.

One of the people arrested is a 14-year-old known as Zod, suspected of leading the Mod hacking crew. Mod is suspected of hacking into a USAF computer system.

Corley took exception to remarks made by police chief Donald Delaney. Defending the practices of the club and the suspected hackers as innocent, Corley claimed that its purpose was to exchange information on telecommunications technology rather than any illegal activities.

Delaney countered this: "We have confessions from people who say that they received information at these meetings on how to illegally obtain Unix code from remote systems. Zod himself said that he got the number that allowed him to call forward into the university." The case continues. ■

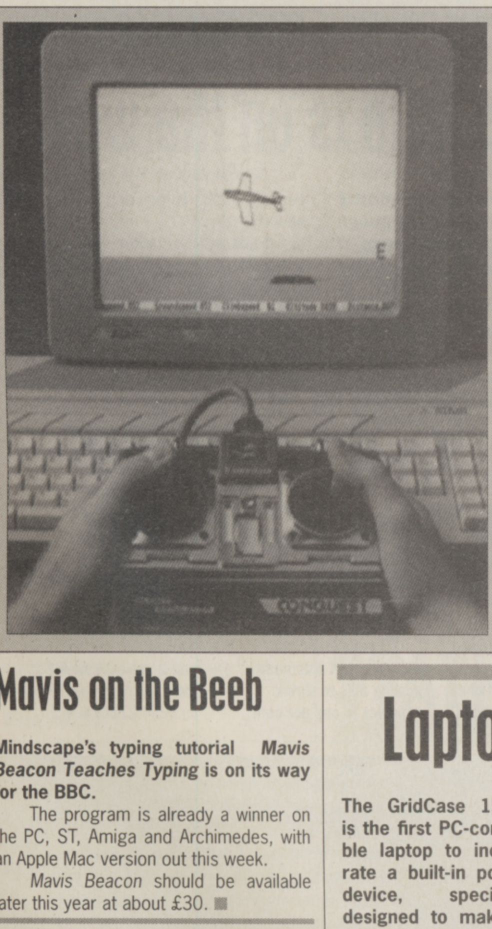
Kosher data on dodgy motors

A new computer system is being developed to aid customers dipping their hands into the shark infested waters of the used car trade.

The Hire Purchase Information Company, the trade's watchdog, is to provide extra information from its nationwide database on such details as number of owners, insurance damage claims and correct mileage. Buyers who will pay a £15 fee at an RAC or AA centre for a 'user friendly' printout on their intended purchase.

It's estimated that 7.5 million used cars are sold each year, half of them by the trade. HPI director John Duffell said: "There are some very worrying pitfalls for people buying second-hand cars and we hope to provide widespread public access to our information next year."

So it appears that soon a computer will be able to tell you whether the man with the rusty Cortina is an Arthur Daley or not, a decision humans have been evidently been having trouble with for some time. ■



Radio control your flight simulation

If you no longer find the on-going deluge of computer flight simulations remotely inspiring then you may just find this of interest.

The logical next development, of course, is a simulation of simulated flying; radio controlled flight but on your own computer console. You don't even miss out on the thrill of those radio controls in your hand, as you just plug it into an Atari ST. Developed by Ambrosia, *Aerochopper* faithfully reproduces all the characteristics of controlled flight, cross-winds and all.

With 22 aircraft to choose from (helicopter or fixed wing) and 131 individual characteristics, plus various 'camera control' modes and the option of a military dimension (bombs, rockets, F-18s etc), the program offers staggering range, and presumably much fun for flying enthusiasts. Available from September, no price is fixed as yet. Contact: 0272 550900. ■

• Control your computer with a radio joystick.

PC-Kwik
Power Pak

• PC-Kwik: *turn up the power.*

Kwik pick

A PC utility pack from the US that can enhance the performance of any PC has been announced by UK firm P&P.

***PC-Kwik Power Pak* contains five modules that accelerate and make more convenient the use of a PC. The package includes disk cache, print spooler, RAM disk, screen accelerator and keyboard accelerator.**

Each of the modules operates independently but the overall efficiency improvement is claimed to be in the order of 400 per cent.

Further information about the £113.85 package on 0706 217744. ■

PC 3D graphics

Ground-breaking Californian company Autodesk last week announced its latest baby: *Autodesk 3D Studio*, a completely interactive software tool for creating professional 3D still and animated graphics for 386/486 PCs.

Now, a less than modest £2,000 price tag may put off most punters, but a glance at its specifications is somewhat redeeming. It is able to produce realistic shapes that move with natural motion, and generate images and animations from them quickly and easily – a first for PC software at this level.

For more information call 0483 303322. ■

Mavis on the Beeb

Mindscape's typing tutorial *Mavis Beacon Teaches Typing* is on its way for the BBC.

The program is already a winner on the PC, ST, Amiga and Archimedes, with an Apple Mac version out this week.

Mavis Beacon should be available later this year at about £30. ■

Robot scene

A two-day conference on robot applications is to be held at Bridgewater College on October 9th and 10th. Visitors will be able to see the latest in automatons. Call 0984 23053. ■

Laptop PC with a trackball

The GridCase 1550sx is the first PC-compatible laptop to incorporate a built-in pointing device, specifically designed to make life easier for those who want to see a more portable Microsoft Windows 3.

Grid Systems, the manufacturer, is convinced Windows will be successful in the Fortune 100 Firms market and is trumpeting the product as the first laptop for Windows-based processing. Mike Maples of Microsoft is inclined to agree, describing the Gridcase as: "a portable showcase for Microsoft graphical Windows applications." He drooled: "Its 386 SX processor, bright backlit VGA display and built-in pointing device make it ideal to take *Excel* and Windows on the road."

The system is scheduled for September in the US with no information on UK price or availability as yet. ■

This disk will self destruct in 10 seconds...

A disk which self-destructs when unauthorised access is attempted has recently been patented.

The disk only works with a tailor-made computer and comes housed in a special case with its own drive motor and read-out head. Built in to the casing is an abrasive wheel which is held away from the sensitive surface by a mesh of wires and pins.

If a thief attempts to break into the casing in order to read from the disk, the pins are disturbed, the wires break and the wheel crashes onto the disk surface. This would certainly make backing-up an interesting business. ■

Startled rodent gets a shock from the microchips

BBC MICRO MAKES A COMFY MOUSE HOUSE

There's nothing especially fascinating about the computer mouse – unless it's alive, goes squeak and is petrified of cats.

That's the type of rodent inhabiting Pippa Giles' trusty old Beeb – at least until recently. For the mouse had discovered that hole at the back of Acorn's trusty old stalwart and had crept in and tucked up beside the humming processors and boards.

Said Pippa, of Towcester: "Due to the summer holidays I was starting to feel bored so I went to play with my temperamental old Beeb. We've had it for many years and it's responsible for most of the games in our house.

"This time, when I turned it on, instead of being greeted by the usual tones I was greeted with a high pitched sound.

"My father took a spanner to the machine and undid the computer. We couldn't believe it. Inside was a sleepy mouse. He's been living in the computer, using it as a toilet and storing food there."

But the mouse realised he's never get any peace, and quickly did a runner never to be seen again.

Unfortunately, the machine no longer works and has been sent back for repairs.

Perhaps if Acorn fails to bring it back to life the old machine can be returned for the homeless mouse. ■

Laser for less than a grand

The LZR-650 is a sub-£1,000 desktop laser printer, capable of six pages per minute and able to emulate Hewlett Packard LaserJet II, Diablo 30, Epson FX-80, Proprinter and IBM graphics printers.

It produces 300 by 300 dots per inch and has 512K of memory – upgradable to 4Mb in card form – and can be controlled directly from the PC screen.

Available now, it costs £918. For more call GADC on 044282 8681. ■

Multimedia agreement

An agreement recently signed by Intel and PictureTel is said to: "mark the point at which videoconferencing and multimedia computing begin to merge as industries." This was the comment of Intel's Tom Trainor.

The idea is to create windows on the computer screen for interactive multimedia. The deal sets combines PictureTel's digital video compression techniques with Intel's expertise in computer architecture to create true desktop videoconferencing.

It also extends Intel and IBM's development of Digital Video Interface (DVI) technology into the wider commercial market. ■

• Busy Tandy has launched yet another laptop – this time it's a low-end 8MHz effort weighing in at £799. The 110FD features an NEC V20 processor and 640K of RAM, one 720K floppy drive and an optional 1Mb expanded memory card. Vision comes via an LCD supertwist backlit screen. There are the usual parallel port and RS232 and it will operate for 4.5 hours on rechargable batteries. It measures a respectably compact 70mm x 310mm x 252mm. ■

PC virus help is on the way

With a recent computer industry report claiming that data lost through virus invasion is worth thousands of millions of dollars in the United States alone, the UK release of *Norton Anti-Virus*, a PC protection program, seems timely.

The Windows-compatible package is said to offer prevention as well as cure by guarding against potential viruses as well as killing existing ones.

The system can be configured to different security levels. A background interceptor module is included which looks for new viruses.

Publisher Symantec will be releasing a regular virus update to registered users of the software. The price is £149. Call Symantec on 0628 776343.

Another plus for DOS-based machines is the release, in the United States at the moment, of *Vi-Spy*. This program remains memory resident and checks all floppies for viruses. It costs $250. For more call Software Systems on 0101-215 659 5300. ■

Grab those PC graphics

TGL Plus **is a new package for PC owners who want to manipulate graphic files.**

Virtually all recognised image formats can be handled and converted one to another. Once processed they can be loaded with the original program not being resident on the machine.

Features include dithering and automatic scaling able to shrink graphics to one per cent original size or expanded up to 30 times. *TGL Plus* is Windows and DOS compatible. It costs £149 and is available now. For more call Software Forward on 0234 272474. ■

NEW COMPUTER EXPRESS

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FROM The ARCHIVE

ONE YEAR AGO

DESK OFfiCE
The all-in-one micro-phone-fax was announced by Canon in Japan. The machine, known as the NaviSP incorporated a power PC, fax machine, printer and telephone. Heavy discounting in the land of the rising sun made this desirable machine sell for an unbelievable £1,200.

Despite the creative fanfare, it still hasn't rolled off the ferry at Dover Eastern Docks.

FORCE ALE
An enormous PC database capable of storing up to 50,000 high definition images had estate agents the length and breadth of the country salivating. *PC Album* from Freehand could use images digitised from video or a scanner and combine picture with salient details of say, every house in Derby.

The basic system came in at £1,250 but those with money to burn (or houses to sell) could spend £15,000 on a full featured system built around optical storage.

PIRATES AHOY
Pirate copies of Nintendo and PC Engine cartridges started arriving in the UK. The cards, manufactured in Taiwan and Hong Kong were being distributed in the UK and Nintendo was preparing to flex its legal muscles in a bid to curb it.

VANISHING TRICK
Software importer Mahli Khan claimed to have a product so wonderful that it would revolutionise the whole home leisure industry.

What was it? Khan wouldn't say, but confidently predicted there would be one in every home by mid 1990. We rang him one year later to find out where this wondrous product was.... line disconnected.

TAXING THOUGHT
A computer was installed by the Inland Revenue designed to track down those people whose expenditure was greater than their declared income.

The massive supercomputer held a year's worth of the country's tax returns and had access to land registration, bank records and shareholder lists.

12 months later the rich still get richer and the poor still get poorer.

HOWE SLAMMED
The Department of Trade and Industry slammed Data Registrar Eric Howe for his softly softly approach to hackers and computer misuse.

Replying, Howe said:"You've only yourself to blame if a neighbours cattle get into an unfenced field. The government has taken notice and the Computer Misuse Act is currently building a high voltage electric fence to keep the cattle out.

PROBLEMS PROBLEMS
Industry pundits jumped for joy at the rumour that chip giant Intel may have been having problems with its full-featured 80486 PC driver. The rumour proved unfounded as the renamed i486 quietly took its place in some of the more expensive PCs

TWO YEARS AGO

EASTERN INVESTMENT
Japanese electronics group Fujitsu backed Sir Clive Sinclair's bid to produce a cheap wafer chip as a part of its £6.5 million investment package in the UK.

STS GOING CHEAP(ER)
Distributor SDL pipped Atari to the post in the price cut wars with a £299 STFM only weeks before Atari's own £100 cut.

FAIRED EEL
Konix donated part of its stand at the Earls Court PC show to the National Association of Computer Retailers in an attempt to help clean up the computer industry's image.

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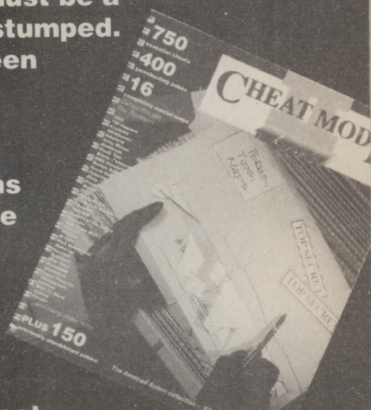

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Tel: 061 480 2693
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CPC

TIME WAITS FOR NO MAN

Well I'm damned if those deadlines didn't catch me out again. There I was, determined to be on-the-ball and bring you a special exclusive console story in this 'ere column as soon as the story broke, and blow me, those lads on the *Express* news pages beat me to it.

You see the whole problem is that I have to write this column a couple of weeks in advance, and those crafty news-hounds don't always tell me what's going in that week (OK, so I don't always ask)... anyway, the upshot is that yours truly has been well and truly scooped. Still, better late than never...

What great news it is, though! Anyone expecting to see the CPC tarted up with just a few bells and whistled must have been well and truly gob-smacked when they saw the new Plus machines. And what about the console – cyber or what?

Actually, I've known all about the new machines for weeks (boast boast) – I just couldn't tell you. Amstrad had the whole story embargoed until the end of August, even though it had flown a dozen UK journos over to Paris in June for a sneak preview. You can imagine what it was like sitting on all that news and not being able to breathe a word of it.

LOOKING TO THE FUTURE

Anyway, by now you've read the news story and the review (a couple of issues back), what are the implications for existing owners?

Well, the best news of all has to be that all those CPCs already out there have *not* been rendered obsolete. Far from it. The only advantage offered by the new machines is the ability to run console games. Although these will feature better sound and graphics than traditional CPC fodder, the old machine is still a pretty fair games micro even now. And even publishers writing console games look likely to produce versions for the old hardware at the same time. I say 'old' hardware, but the fact that tape or disk software produced for the new Pluses effectively still uses that hardware (it can't access the new dedicated chip – only cartridge software can) means that not only will old software work on the new machines, but tape/disk software written for the new Pluses should work on existing CPCs too.

And Amstrad's relaunch has got to be good for CPC owners if only because the renewed interest in the format should give rise to a fresh burst of software releases – publishers will be keen to attract a whole new batch of users, after all.

One of Amstrad's smartest moves of all, though, is its decision to produce a range of machines and not just a console. And by incorporating a cartridge port into the Plus machines it's generated a perfect upgrade path for console buyers who decide they want to get properly into computing instead of simply playing games all day.

All in all, Amstrad has shown itself to be extremely serious about the 8-bit market in general and the CPC format in particular. After months – years, even – of speculation about the incipient demise of the CPC, the machine has received the biggest push it could hope for. And those sceptics who thought the CPC was dead – well, you ain't seen nuthin' yet!

BURNIN' RUBBER

This brings me neatly to *Burnin' Rubber*, the Ocean driving game bundled free with both the GX4000 console and the 464 and 6128 Plus. I first played this game in Paris at the launch, but the version on show there had no collision detection and unlimited time, so it was difficult to form a final opinion. Now, though, we've had a console in the *Amstrad Action* offices for a couple of weeks (eat yer hearts out!) and I've been able to play it properly.

Imagine a cross between *WEC Le Mans* and *Chase HQ* and you've got *Burnin' Rubber*. It's a game loosely based on the 24hrs Le Mans sports car race, and has you driving your 200mph monster over a twisting course complete with (very hard) ad hoardings, hills, dips, other cars and even tunnels. You have a time limit to complete each stage, and as the race progresses this time limit gets tighter and tighter. Ultimately, you'll be relying on the time buffer gained on earlier, easier stages just to keep going.

Nothing very earth-shattering in that and, indeed, at first it's hard to spot any huge technical advances over the standard CPC. True, the main sprite is very detailed, and the whole thing is extremely fast and smooth... and then you crash. And that crash sequence really shows up the console's power as your car cartwheels end-over-end down the track and finally spins to a halt. You see your car from a variety of different angles as you crash – always perfectly detailed – and the scrolling slows down not one jot while it's happening. This is where the sprite hardware really shows its mettle.

The second – and even more spectacular – surprise dawns on you (almost literally) as you carry on racing. Is it your imagination, or is that sky getting darker, the ground redder? No, it's not your imagination. The new hardware has a huge palette of 4,096 colours instead of the CPC's 27, and *Burnin' Rubber's* programmers have made full use of them to provide a subtle and often breathtaking series of transitions from broad daylight, through dusk, into full night. All helped, of course, by the increase in maximum on-screen colours from 16 to 32. Until I saw it, I would never have imagined simply increasing the palette could have made such a difference.

And the sound? The improvements are subtle rather than startling, and masked by the fact that the new monitors have much better speakers and that the programmers have done such a good job in the first place. Your car's engine revs convincingly and your tyres squeal horribly as you overcook the corners – you even get a regular, rhythmic 'thud' as you bounce down the track in the crash sequence.

As a game, *Burnin' Rubber* is playable in the extreme. The plot is about as thin as it could be, but the collision detection, sprite response and judging of time limits all make up for that to provide the best racing game the CPC has yet seen.

P.S. If you can make it into the night, you're getting pretty good.

SPECTRAVIDEO STICKS IT TO 'EM

All this stuff about the new Amstrads is threatening to squeeze everything else out this week. There's just space, however, for a mention of Spectravideo's latest joystick bonanza.

No, there's no new button-sprouting, arm-aching, wallet-busting wonder-stick this week. Instead, Spectravideo is cutting the prices on its entire Quickjoy range.

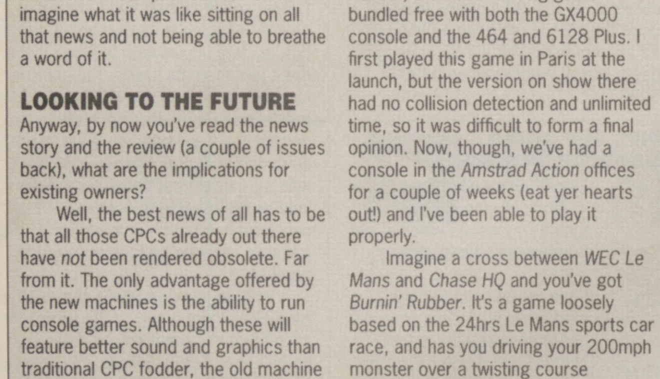
Typical reductions include £1 off the Quickjoy Junior, down from £5.95 to £4.95, and £3 off the Quickjoy N1 Pro for the Nintendo, down from £22.95 to £19.95.

OUT WITH A BANG

Meanwhile, for compilation fans everywhere, Domark is releasing *TNT*, an "explosive" collection of five Tengen arcade conversions. These consist of *Hard Drivin'*, *Toobin'*, *APB*, *Dragon Spirit* and *Xybots*, all top releases from last year.

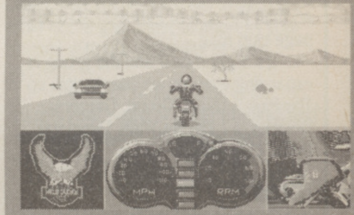
TNT should be available on the CPC in the next few weeks. The only bad news is the price – £14.99 on cassette, £24.99 on disk.

Rod Lawton



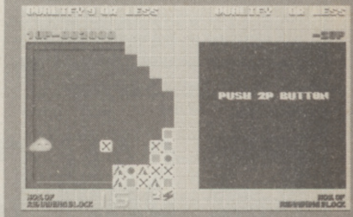
Burnin' Rubber*: Terrific speed, playability and sprite handling from the first console game.*

CPC 9
Spectrum 10
SAM Coupé 10
PCW 10
MSX 10
QL 11
BBC 11
Archimedes 11
C64 11



• *ST angel on a Harley.*

ST 12



• *Plotting: Amiga game of the week.*

Amiga 14
PC 16

SPECTRUM

PLUS 3 USERS GROUP

Plus 3 owners are always whingeing on and on about the lack of specific support for their machine in terms of software and magazine coverage. This can be tiresome, so cross over the street if you see one coming and don't start talking to them at parties whatever you do. They've got a point however, which is why an organisation of like minded people was set up a year ago to give the kind of selective support to the Plus 3 that its legions of users demanded.

'The Plus 3 Users Group' is the sharp name of this sterling body and thanks to *Express* you can join at a discounted rate. Rather than the £11 it costs everyone else to subscribe to the Plus 3UG for a year, readers of this column can save £1.50 and sign up for the specially reduced sum of £9.50.

Membership of Plus 3UG gives you access to a helpline conducted by post, telephone and modem; an absolutely huge, although not completely free, PD library; and 12 issues of *Contact* – the A5 (half the size of *Express*) 30-odd page club mag.

It's a good deal and the group is expanding even as we speak. Join up at:
The Plus 3 Users' Group, Garners Designs, 57 Lovers Walk, Dunstable, Beds, LU5 4BG.

GHOST

Here's the second thrilling instalment of *Ghost*. A program which effectively banishes incompatibility problems on the Plus 2A and Plus 3 by transforming them into a 48k Speccy, minus the rubber keys and dodgy power lead, of course. If you missed the first part or can't summon up the energy needed to type the whole blooming thing out send an SAE and tape for a copy (or SAE and 10p for a printed version) to the author: M Harris, 1 Salters Lane, Faversham, Kent ME 13 8YD. The same bloke will also open supermarkets and village fetes for a reasonable fee.

```
1055 DATA 237,176,17,125,27
1060 DATA 14,4,237,176,17
1065 DATA 244,27,14,3,237
1070 DATA 176,17,70,38,14
1075 DATA 3,237,176,17,64
1080 DATA 21,14,21,237,176
1085 DATA 17,162,9,14,23
1090 DATA 237,176,33,110,56
1095 DATA 17,111,56,54,255
1100 DATA 1,145,4,237,176
1105 DATA 62,255,50,79,5
1110 DATA 199,62,243,50,0
1115 DATA 0,58,0,64,61
1120 DATA 50,0,64,197,213
1125 DATA 205,191,2,0,0
1130 DATA 214,165,48,9,175
1135 DATA 17,54,21,253,203
1140 DATA 10,126,223,254,13
1145 DATA 205,142,2,83,105
1150 DATA 110,99,108,97,105
1155 DATA 114,32,82,101,115
1160 DATA 101,97,114,99,104
```

The third and final part of *Ghost* appears in *Express* next week. Order your copy now or remain incompatible for ever.

Here's the regular plea for correspondence section. Please send all Spectrum hints, pokes, cheats, fanzines, software, news and comment to: Robin Alway, *New Computer Express*, 30 Monmouth Street, Bath BA1 2BW.

If you want a personal reply throw an SAE in and be prepared to wait a few months.

Robin Alway

SAM COUPE

COMPUTER FAIR

The next All Formats Computer Fair sounds like an event Coupé owners should attend. It take place in the plush surrounds of the Royal Horticultural Halls in London on Saturday September Ist, 10 am – 5 pm.

There will be a SAM village packed with Coupé related stalls including SAM Computers – Bruce Gordon and Alan Miles' new company. Admission price is a-not-too-bad-at-all £3.

You may remember, although I won't blame you if you don't, me printing a tip which let you load in a FLASH! typeface. Well here's a much simpler way of doing the same thing.
SAVE a font to disk or tape from FLASH! Reset the SAM, Type LOAD "Filename" CODE 20880,1096.

When it has finished loading, the new text will make its appearance.

Thanks to Zenith Graphics, who put out a disk crammed with SAM software every four months, for supplying it.

I'll print a full review of their wares when I get sent a copy.

NEW ASSEMBLER

There's now another assembler for the SAM. *SC Assembler* has been written by the author of some respected Speccy utilities, Steve Nutting, and comes on disk only. The accompanying bumph claims it's the best Coupe assembler yet, and it certainly looks impressive with a word processor-like display of 62 columns and a gauge down the side of the screen indicating the amount of memory used.

You can configure ink, paper etc before you start and, although I'm a bit thick when it comes to technical things, the editor is apparently easy to use, with function keys employed throughout and worded error messages.

Other features that will impress assembler users are a source compressor to save memory and the fact that SAM ROM isn't used, thus ensuring complete compatibility.

SC Assembler costs £10 on disk only, from: Steve's Software, 7 Narrowe Close, Histon, Cambridge CB4 4XX.

Robin Alway

PCW

FLIGHT OF FANCY

I'm often accused of being frightened of flying. This is nonsense. It's the crashing I'm afraid of. I once flew on a plane in China. The stewardess locked herself in the toilet. In trying to rescue her, the co-pilot got his watch and therefore himself caught fast in the lock. In trying to rescue him, the pilot locked himself out of the cabin. Luckily they got back in before the automatic pilot had a chance to land us vertically up a skyscraper in Hong Kong harbour.

Anyway, for those who want to try their hand at piloting a fighter plane the excellent flight sim, F16 Combat Pilot, will be available for the PCW from Digital Integration from mid September, price £24.99. Great for teaching you how to fly a fighter plane but maybe not so good for showing you how to get a stewardess out of a toilet. Phone 0276 684959 for details.

CAN OF RIBBON WORMS

Life is short. So are Indian batsmen. And carbon ribbons. 9512 owners will know that their carbon ribbon cassettes wear out all too quickly. Now Aladdink has brought out a kit to let you replace the carbon film and spools in your existing cassette. At £10.99 it claims to bring down the cost of replacing a ribbon to £2 a throw instead of the £5 or so you pay in shops. Aladdink is on 08907 50965.

PIPS ARE GOING... MORE PIP OPTIONS...

[O]	Object file transfer: for transferring machine code files. Ignores control-Zs which would normally be an end of file marker.
[Px]	Page. Inserts end of page markers every x lines. If no x is specified will take x to be 60. Normally used with [F] to take out page ends already in a file and reset them to the desired figure.
[Q@^Z]	Quit. Stops copying the file when the specified string @ is reached. PIP M:=A:\*.*[QFRED^Z] for example will stop copying when the word FRED is reached. Only seems to work with capital letters.
[R]	Reads system files which PIP normally ignores.
[S@^Z]	Starts copying when the string @ is reached. Often used with Q to give start and end points.

LOCO TIP

Keep details of your diary, useful phone numbers etc., in a file called TEMPLATE.STD on your startup disk. When *you run up LocoScript it will automatically* be copied to drive M, meaning you can look up the details whatever else you're doing.

If you make changes, remember to copy it from M back to the startup disk before switching off.

BASIC TIP

The command OUT 248,8 blanks the screen. OUT 248,7 unblanks it.

Rob Ainsley

MSX

POOR RESPONSE

Reading this month's *Network* magazine, the alternative magazine for the MSX user, I see that the response to the MSX programming competition has been very poor so far. This is in spite of the fact that there is a prize of £100 to the person who sends in the best entry. It still isn't too late to send an entry to Network, so if you have written anything for the MSX, and think that your effort is worth seeing, send it to *Network*, 396 Park Lane, Maghull, Merseyside L31 1HQ. Entries should be sent on 3.5-inch disk if possible and, of course, don't forget that good documentation also helps. The only thing that *Network* asks of you is permission to add the competition entry to its public domain library, which is a small price to pay if you happen to win the hundred quid.

KLAX

I have now had a full week playing Tenegen/Domark's latest release for the MSX, the highly addictive game *Klax*. If you believe all you read on the package that Klax is supplied in, it has got to be the best thing since sliced bread. For example; "The latest craze from California !"; "99 Waves of sheer fun"; and "The fastest selling coin-op ever" are just a couple of quotes from the bumph on the box, so at least Tenegen believes that it has a winner on its hands. The game is supplied on tape for the MSX user, and is priced at £9.99. It is a pity that a disk version is not available for the MSX user, as there are a good number of MSXers with 3.5-inch drives, particularly in Holland and Germany. We seem to be the only format without a disk version. Is the game as good as we have been led to believe?

How do you describe a game like *Klax*? How about a sort of 3D *Tetris* with added features (what do you mean you haven't seen *Tetris*, everyone must know *Tetris*). All right, for those who haven't, the object of both games is to position falling objects, and stack them in certain positions to score points. In *Klax* the objects are coloured tiles, and you have to catch them as they tumble towards you down a five lane table. Flip the Tiles into bins to make coloured stacks, and try to make rows of three or diagonals.

It all sounds so easy, but when you have half a dozen tiles all cascading down the table at the same time, things can get a little hairy. All in all *Klax* is a very good game, and if you enjoyed *Tetris* then this game is an essential purchase. This game took top marks on most formats, and the MSX version loses nothing when compared to the other versions.

READING MATTER

Good news for MSX users in the Reading area, a new computer store has opened, and they are stocking MSX software. Although they have only a few titles in stock at present they have assured me that, if the title you require is available, they will attempt to get a copy for you. The Company is called Computer Visions, 30a School Rd, Tilehurst, Reading, Berks, Tel 0734 452416. They also supply mail order, so here is another supplier to add to your list.

Keith Neal

C64

ALL TAPED UP

Some time ago now, dear reader (about four months ago to be a little more precise), I mentioned a chap called Jack Lockerby. He is the figure behind a software company known as River Software, and he's been producing decent adventure games for the C64 for many a moon, so he should know what he's doing by now. When I mentioned him last, he had adventure games available, and these were split over three disks, each disk costing £4.50. Well I can tell you they are now available on tape (they weren't for a while). One of the titles has gone missing, but there are now eight adventures on four tapes, each tape costing £2.50 including postage – a ridiculously low price. I can thoroughly recommend these programs, being a great fan of the traditional way of doing things. So if you're a tape owning C-64er who is feeling starved of adventure, the address to write to is: River Software, 44 Hyde Place, Aylesham, Canterbury, Kent CT3 3AL.

IT'S SHOWTIME

No doubt plenty of you will be going to the Computer Entertainment Show at Earls Court, London, on September 15/16. There will be a big Commodore presence, or so my spies tell me, and as ever with shows such as this it could be a good chance to pick up a few bargains. It's just a pity that the show is in London. I know it's handy for Londoners, but what about the rest of us? When's Commodore's next UK tour?!

LET'S SPOKE AGAIN

A few more hints and tips for you, to keep you coming back for more in those games that continue to defeat us all. On *Bombjack*, you can POKE 5112, 0:SYS 3101. On *Ghostbusters*, you can POKE 38454, 96: SYS 24576. On the curiously named *IQ*, you can POKE 25117, 254: SYS 24586. And finally for this week, on our old friend *Attack Of The Mutant Camels*, you can POKE 7019, 0: SYS 4096.

OLD BUT NOT FORGOTTEN

Ever discover something months or even years after you should have discovered it? Something that would have saved you time and lots of effort spent learning things the hard way when you could have learnt them the easy way? I made such a discovery recently. So if you're one of those people about to embark on the tricky path of learning machine code, then I can recommend a book by that programming legend, Jim Butterfield. It's published by Brady books, is about three years old (but being by Jim is still very relevant indeed), and is called *Machine Language For The Commodore 64, 128 and other Commodore Computers*. Note however that because of the book's age it does not cover the Amiga. Nevertheless, anyone with a 64 who is keen to study machine code is well advised to track it down.

Pete Gerrard

QL

PDQL

Quanta, the QL users group, has received several complaints over the past few months about PDQL, the Birmingham-based QL software and hardware supplier. The main grumble has been about non-delivery of goods ordered, although credit card accounts have been debited and cheques cashed, and extreme difficulty in getting refunds. While this has been happening I understand that the Birmingham Trading Standards people have become involved, over PDQL's C compiler, which has been advertised for over a year, but has not been shipped to a single customer, as far as I know.

PDQL has also been in trouble with some of its suppliers, notably Miracle Systems and EEC, over delays in payment for goods supplied.

By the way, the safest way to order items from a mail-order supplier is with a credit card, provided the value is over £100.

If the supplier doesn't 'come up with the goods', you can claim off the credit card company saving a lot of messing about. Where smaller sums of money are involved it might be a good idea to ask for the goods to be sent COD if you aren't too sure about the supplier.

A GOOD DESIGN

In my opinion the QL, although it is over six years old, is still one of the best looking computers around. This is hardly surprising, as a top designer was responsible for putting together the external design – the case and keyboard.

This emphasis on good design is quite unique in my experience for what is, essentially, a low cost machine intended for mass production.

Moreover, the case of the QL is constructed from ABS – a high-quality and fairly expensive plastic.

ANYONE FOR TENNIS

Psion, well known for the Organiser and a couple of classy new laptops, probably won't thank me for mentioning this; it started off developing games for the Spectrum.

Even after it moved up-market and sold Sinclair the suite of programs that was bundled with the QL, they maintained an interest in the games market, and released a couple of games for the QL – *Chess* and *Tennis*.

Psion *Chess* was the first chess game to offer the option of a three dimensional representation of the board and pieces and plays quite a good, aggressive game.

Even if you aren't particularly interested in chess it's worth getting hold of the game just to impress your friends with the capability of your system.

The Psion *Tennis* game is an equally neat piece of programming, and well worth buying, if you can find it on sale.

John Torofex

BBC

WW PLUS QUESTION

I received a call from the other day from a *Wordwise Plus* (*WW+*) user who wanted to know how to set it up with his printer. It is always difficult to answer queries like that because of their broad nature; but I took it to mean that he wanted to make use of more than just the simple bold and italic etc available from the function keys of *WW+*. This however dumps you into a never ending cycle of deciphering the escape codes given in your printer's manual, incorporating them into your document, going back to the manual, and so on. For a new user this is plainly impossible, so what can be done? Three solutions present themselves:

One: Do nothing, after all life is short.

Two: Buy a good book such as *Wordwise Plus A Users Guide*, by Bruce Smith. Most books on WW+ tackle the problem mentioned, some more elegantly than others.

Three: Get hold of a printer driver ROM, such as *Hyperdriver*, which can help you out of the jungle in various ways.

KLAX

Klax, from Domark, is yet another variation on the *Tetris* theme of lining up coloured blocks to score points. *Klax* is a very addictive game with really good gameplay. The graphics are coarse on the Beeb in low res mode 4. Monochrome mode 0 graphics would have been better.

Andrew Brown

ARCHIMEDES

IT'S SHOWTIME, FOLKS!

Beetle on down to the Horticultural Hall near London's Victoria Station. That's this year's venue for the BBC Acorn User show – now the only big dedicated Acorn show – between 7 and 9 September. The Horticultural Hall used to be the regular haunt for the lamented *Micro User* bazaars, but those of you with better memories may remember the building's non-speaking role in *Indiana Jones and the Last Crusade* – it starred as Berlin Railway Station.

Last year saw the A3000 debuting. There won't be any new 'cheap' Archimedes this year, and there might not even be a new 'expensive' one either. Acorn could take the opportunity to show the inevitable non-Unix version of the new R260 ARM3 Unix machine, which would simply be an ARM3 RISCOS machine, with 4 to 16Mb of fast memory and a big hard disk. It's likely to cost about three and a half grand, and for less you can take a current Arc 410, add extra RAM, an Aleph One ARM3, Atomwide 8Mb memory expansion and season with a hard disk to taste. It won't be quite as fast, but it will be close.

The only real advantage of the R260 is its plug-in processor board, which should make it possible to add an ARM4 next year, or an ARM3 board fitted with the FPA (floating point accelerator) chip. Then again, I bet someone will do something similar for that 410...

What will be new at the show? Lots of Arc software. Beebug's *Ovation*, Clares' *Tempest*, *Impression* release two and *Impression Junior* from Computer Concepts will be battling it out for the DTP market. From Minerva: *Flexifile*, which could easily have had the *Multistore Junior* moniker, and *DeskTop Office* – but more of that next week.

Clares, purveyor of graphics software to the gentry, will be showing *Rhapsody*, a music composition package that's more sophisticated then the freebie *Maestro*. It's MIDI-compatible, but not aimed at the pro-muso market like Pandora's *Inspiration*.

Also the *Interdictor 2* flight sim. More scenery to train your cannons at, a more realistic aircraft to fly, and missions!

SCHEMA

Unexpected news from Clares: *Schema*. This is, or was, Acorn's Arc spreadsheet, in the works for 'simply ages'. But application software has become something of a hot potato in Cambridge, and *Schema* has been passed to Clares to finish off (together with the actual programmers CRM, who were 'something in the QL world' at one time). All the rumours said '*Schema* is an all-time turkey': I've seen it, and the rumours are wrong. Now a three-legged chicken perhaps...

It has a lot going for it. It's a spreadsheet with the traditional structure of rows and columns. The normal spreadsheeting functions are good to excellent – maths, time and finance are well covered – and business graphs and charts are built-in. Financial functions follow UK accounting conventions, not the US systems used in PC and Mac packages.

It was Microsoft's *Excel* that showed how a WIMP spreadsheet should work, and *Schema* aims at that level. It doesn't quite reach it, but in one respect it's well ahead. There is a scripting language that makes the spreadsheet programmable.

There are some rough edges, but it's a good dedicated spreadsheet, very customisable, and worthy competition for *Pipedream*. In one megabyte? Fast? Don't know, but when I see the on-sale version, I'll report.

SCREEN GRABBING

On the Arc you can grab the screen with *Paint*, using the Get screen area menu option. But a 1Mb Arc may not have enough memory to run *Paint* as well as whatever you're trying to grab a picture of. So, set up a new folder called !ScreenGrb. Inside that, put an Obey file called !Run. *Edit* has a special Create menu option for writing new Obey files. All !Run says is:

```
ScreenSave <Obey$Dir>.Screen
```

Whenever you want to save a desktop screen, you can use TinyDirs to put the !ScreenGrb folder on the icon bar. Click on it there to save the screen. TinyDirs is only 32k so there should always be enough memory.

The screen is saved in a file called Screen in the !ScreenGrb folder – shift-click on the icon to get to that file.

Ken Coumarin

ST

CALAMUS SPLITS!

The world's biggest Atari show took place in Germany last weekend (see next week's *Express* for a full report), a country where there are over 600,000 STs – twice as many as Britain – and where the Mega is considered practically the base machine. Mention a 520ST with a single-sided drive in Dusseldorf and you'll have them furrowing their brows and saying, "Ein... was ist das, bitte?" *(That's enough German – ed).*

Why? Well, the ST has come much closer there to fulfilling its potential as a 'serious' machine, for what the Americans like to call "productivity" uses. It runs factories (yes, really), it has a strong presence in schools, colleges and universities, and it is not uncommon to find it used as a DTP engine.

In this country, by contrast, desktop publishing on the ST is just beginning to take off. Now the latest development from Signa Publishing could just help it to grow that bit faster.

For Signa has announced what is effectively the splitting of *Calamus*. The current version is to take a significant price cut of almost £200, down to £262.50, to make room for *Calamus SL*, the colour version released at the Atari Messe.

There is of course another way of looking at this. For the new version, which enables DTP users to produce their own four colour separation files for outputting to a Linotronic machine and thereby save on expensive repro costs, is in fact going to cost something not unadjacent to £500 – a good deal more than the previous version before the price cut! So the announcement can be interpreted as either a price cut for *Calamus* – or a price rise!

Confused? That's not all. Because the more observant among you may already be aware of a company called Network News Services, which has for some time been undercutting Signa by a good £100 plus and selling *Calamus* for £299, and throwing in a set of TOS 1.4 ROMs for free. And when you discover that you can buy it for $170 in the States, you begin to wonder just what the hell is going on.

In fact, threats of legal action are being muttered about by both parties, with NNS quoting from the Treaty of Rome, which forbids unfair restrictive practices; and Signa alleging grey importing (not, as far as I'm aware, a criminal offence).

Because of Signa's links with the German company that holds the licence to *Calamus* it may take a while for NNS to get supplies of *Calamus SL*. Certainly it has not officially announced it. But you'd do well to bear in mind the various deals on offer from the two companies should you be about to invest in *Calamus*. NNS is on 0375 859103, while Signa is on 0252 341600. Compare, as exam papers say, and contrast.

TOMORROW'S WORLD

The Atari Messe may have proved short on startling new developments, such as the launch of the controversial STE last year, but at least it gave visitors a chance to see the TT (yet again).

This, of course, is Atari's much touted (and much announced) £2,000 'super ST', which if nothing else offers a glimpse into the future of the current machines. What the TT owner does today, you'll be doing tomorrow.

The startling thing, as readers of *Express* will already know, is that even before launch the TT has recently shot up in speed, from a very respectable but hardly earth-shattering 16MHz up to a terrifyingly fast 32MHz. That means that ST software will run on it some five to seven times faster. And with optimisation, that should increase to some 10 times quicker!

The rest of its specifications make mouth-watering reading for those of us who intend to be sticking with Atari for some years, too. Stand by for a 32MHz machine with 2Mb of memory, 40Mb hard drive and super-high resolution monitor.

It's impossible to put a date on it, of course, but I reckon that by the time of the next World Cup, when you're looking to replace your current model, that's the kind of specification you could be looking at. And it sure as hell won't cost as much as two grand either!

SIGNA OPENS UP

More news from Signa (see the *Calamus* item at the beginning of this column), which has announced the opening of its first branch office, in the centre of Sheffield.

This is good news indeed for those of you lucky enough to reside in the beautiful north of England *(stop patronising and get on with it – ed)*, for I'm forever opening letters that complain about the southern bias of ST shows and supplies.

Anyway, Signa boss Mike Dale tells me that Signa Northern is actually two suites on the 4th floor of a converted mill. "I anticipate the office will be completed and fully open by the middle of September," he predicts, "at which time we'll be having open days and demonstrating our complete product range, including *Signum, Script*, scanners, OCR, *Calamus*..." At this point I had to interrupt, for fear Mike was about to read his whole catalogue out to me.

Anyway, Signa Northern is at Aizlewood's Mill, Nursery Street in Sheffield, and you can see if you can wangle an opening invite by calling 0742 823155 or faxing a begging letter on 0742 823215. Best of luck to 'em, I say!

CUBASE 2 HITS TOWN

As mentioned in this column a week or two ago, the latest upgrade of *Cubase* should now be available from your friendly local music shop.

In fact *Cubase* is busting out so much with version 2 that it now comes on two disks (though Evenlode is keen to stress that you can still use it with just a single disk drive). It incorporates a number of new features, the most notable being, I'd guess, full WYSIWYG score printing and an Interactive Phrase Synthesiser, a wholly new facility that enables the modeling of new versions from existing music.

Another neat feature is the option to 'throw out' modules to gain space: you can discard the Score Editor, for example, if you're working with a 1040ST or Mega 1, leaving more space in memory for recordings.

Cubase v2, which also includes a few bug fixes to 1.5, is free to all official *Cubase* users, or new for £550 (gulp!) from Evenlode Soundworks (call 0993 898484).

CALLING FLOPPYSHOP

Steve Delaney of Floppyshop, the delicious Aberdeen-based PD library and font of ST wisdom, has asked me to point out that all callers should ring on 0224 312756, and not on the old number some people are still using.

By the way, the helpline is now available between 9am and 4pm Monday to Friday, effectively a doubling of the old hours.

OUTLINER FOR ST

A Mr Neil Bymouth of Bath has written, complaining. And for why, you ask? Because he can't get his hands on an outliner program for his ST.

"In case you've never been unfortunate enough to be obliged to sit in front of a PC contemptible," Neil writes, "*Outline* is perhaps one of the few good pieces of software ever to appear on MS-DOS. It's a text editor – more properly an ideas processor – that enables you to jot down ideas, edit them, move them around and 'nest' them.

"So you have your flashes of inspiration and jot down every idea on a separate line. Then you start organising and expanding. It doesn't sound much, but believe me it's brilliant. But I can't find such a program for the ST. Why not?"

Well, Neil, I have suffered the PC contemptible fate, and *Outline* is, I admit, brilliant.

The good news is that there is such a piece of software for the ST. It's called *Folded*, and it's actually intended as a programming editor.

Best of all, it's public domain – so you can try it out, and if it's not up to scratch, then you've hardly lost out at all. It's available from Floppyshop: call Steve Delaney on 0224 312756.

Still, does anyone else know of any other such programs? They really do help the creative process.

The only other program that's remotely like what Neil describes is the Scrapbook section in the utterly unspeakably brilliant *Harlekin*, which may cost £50 but is worth every single penny.

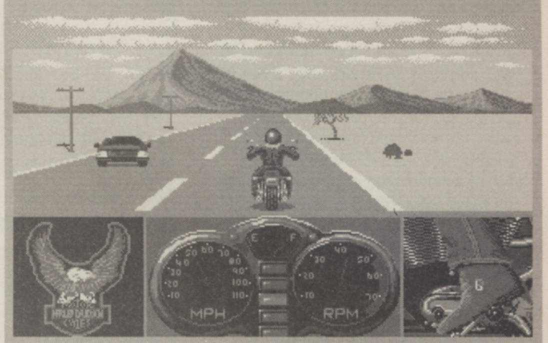
It's a superb suite of programs and utilities, and it's available from HiSoft on 0525 718181.

Steve Carey

HARLEY DAVIDSON ST

GAME of the WEEK

Mindscape • £29.99



If there's one type of game which really makes the adrenalin flow, it's the racing simulator. Last Christmas the games charts were dominated by car games from every respectable software publisher out there. In recent months we've seen a decline in the number of racing games but this week it's the turn of Mindscape to cash in on this addictive formula.

Harley Davidson **is a motorbike simulator in the same vein as** ***RVF Honda*** **and** ***Super Hang On*****. The objective is to race from the East Coast to Sturgis in a mere 10 days. When the game starts you have a battered Harley Davidson and you're dressed in typical moped gear. The idea is to build up cash so that you can improve your bike and purchase new riding gear. To help you, you're given a meagre amount of cash at the start and you can play various sub games to increase your wealth.**

The events aimed at increasing your financial reserves include typical biker stunts. For example, there's the slow ride contest where you need to move your Harley as slowly as possible without falling off and there's the Weenie Run – an ultra weird contest. Here, you're girlfriend rides pillion and she stands on the back of the bike biting Frankfurters which hang from strings above the road while you steer around underneath!

During the race you move through several towns and to buy new equipment you simply visit the bike shop where you can point and click on the item you wish to buy. The various shops enable you to buy custom engines, jackets, boots and other extras essential to making your bike the coolest machine around.

In between towns you need to dodge the typical junk in the road and try to go as fast as possible. If you break the speed limit of 65mph the cops whizz along and arrest you. If you try and out race them you usually end up paying a fine but pull in and they often let you go without incident.

This is undoubtably one of the better bike games around. The control of the bike is realistic with clutch controls, stalls and crashes. The road moves smoothly and the bike is easy to move – there's even a realistic engine noise. There's nothing particularly original about the challenge but the clever sub-games make it an absorbing and exciting thrill. It weighs in at a hefty £30 but if you got money to throw around, throw it in this direction – you won't regret it.

Mark Higham

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AMIGA

CONSOLE DODO

No one was as impressed as myself when Commodore announced its CDTV system. With built in CD player and full Amiga compatibility, the CDTV was not only good news for the Amiga, but for the computer scene as a whole. Now, after many months of uncharacteristic good decision making, Commodore seems to have gone back to the old days of botching things up with the release of its latest baby – the Commodore Games Console.

Based on the aged C64 (which, admittedly, has become one of the most successful computers of all time), the console uses the equally aged cartridges which Commodore tried to introduce when the C64 was originally launched. OK, the C64 still sells well, but what myself and many other people can't understand is why Commodore didn't produce a cheap console based around the Amiga. OK, this could have seriously hurt the CDTV before it was even launched, but with machines such as the Neo-Geo, PC Engine and Megadrive capturing most of the console action, Commodore's aged 8-bit is going to be up against some stiff competition.

Then again, Amstrad too has decided to plunge into the console market with a machine which is based around ancient 8-bit technology. The difference here is that Amstrad knows how to market such things – as we all know, marketing has never been a factor in Commodore's favour.

MUSIC UPDATE

When Microlllusions launched its acclaimed *Music-X* MIDI sequencing system, Amiga musicians were promised a whole host of add-on modules to further enhance an already impressive product. Indeed, Microlllusions went to great lengths to stress that *Music-X* was far more than a sequencer, preferring instead to call it a 'complete music workstation on a disk'.

Among those items promised were a whole range of patch editors for use with the *Music-X* Librarian page. Microlllusions promised that several were being developed including editors for the Korg M1 (I'm still having to program my M1 from the front panel!) and the Roland D10/D110/D20. OK, there are plenty of patch editors already available from other companies (such as Dr.T) but what made the promised *Music-X* editors so special was their price – a mere £10 (Dr.T editors will set you back 10 times that amount!). But as we all now know, none of the promised add-ons ever materialised.

According to Microlllusions, the patch editors are still coming. If you've upgraded your *Music-X* program disk to version 1.1, there are a couple of extra patch editors included on the new program disk, although what they are is still unclear. Microlllusions is now hard at work on *Music-X* version 2, which will include many enhancements over the original including full score editing (about bloomin' time!), drum editing and perhaps even algorithmic composition. The new program should be available later this year for £300. For more info, give Microlllusions a bell on 0480 496497.

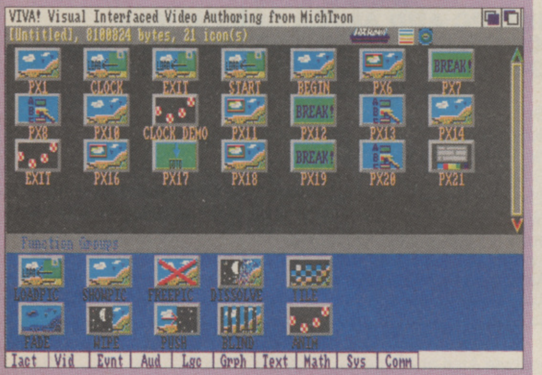
On the subject of music software, look out for a feature in a coming issue of *Express* that will pit the best of the Amiga budget sequencers in a head to head comparison to find the best sequencer for your money. Stay tuned for that one!

MOUSEY MATTERS

Although the Amiga Workbench is predominantly mouse based, it is still possible to use your Amiga if your mouse suddenly dies on you (which is all too common!). The answer lies in those little wonders, the keyboard shortcuts. Here's a list of those available –

Right Amiga + X – Clears the currently active string gadget (such as the icon rename option on the Workbench).
Right Amiga + Right Alt – Same as pressing the left mouse button.
Right Amiga + Right Alt + Cursor keys – Moves mouse pointer.
Left Amiga + Left Alt – Same as pressing the right mouse button.
Left Amiga + Left Alt + Cursor – Drags selected icon or window around the screen.
Left Amiga + V – Selects the RETRY gadget on a system requester (even if the mouse pointer is not over it).
Left Amiga + B – Same as above, but selects CANCEL gadget.

VIVA MICHTRON



• *Viva is a new multimedia authoring system from MichTron.*

With the Amiga's increasing importance within the multimedia market, software producers have been quick to produce packages to exploit the interest generated by the hypermedia hype. MichTron's *Viva* system has been available for a number of months now over the pond, but now it's available within this country thanks to St Austell-based Microdeal.

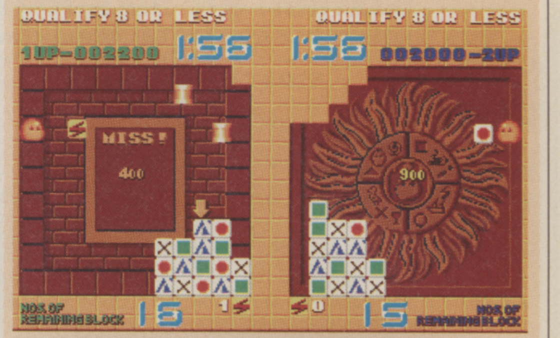
***Viva* is a hypermedia authoring system for the Amiga that is designed for the production of multi-media information systems. *Viva* gives you control over text, graphics, video, sound, colour and animation, all from within a nice friendly Intuition-based user interface. No multi-media system can claim to be truly multimedia unless it can do just that – control multiple information sources. *Viva* is capable of controlling video recorders, laser video disk players and a full range of other visual media devices.**

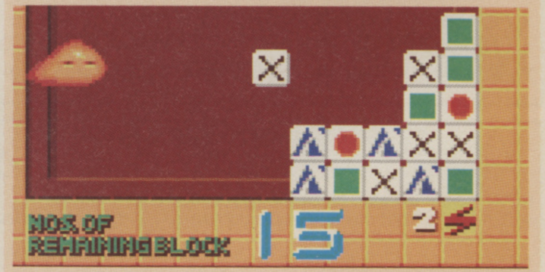
***Viva* uses an icon-driven interface that is extremely easy to use. Through the use of a unique visual construction set, anyone can create complex multimedia applications with the click of a mouse (well, several clicks actually). Once you've produced your multimedia application, it can be saved out in a stand-alone form, therefore allowing *Viva* to be used for the production of commercial multimedia applications. For more, give Microdeal a bell on 0726 68020.**

PLOTTING

AMIGA GAME of the WEEK

Ocean • £19.99





After saying in last week's review of *Extase* that puzzle games are the next thing, what should appear for the Amiga this week but a review of yet another puzzle game.

However this time the style of the game is quite different. Instead of creating a strange and surreal atmosphere (like *Extase*), Ocean has opted for the cute-and-bouncy feel. You play a small brown blob known as an 'Amsha', who is trapped in a strange tomb-like building. Each room contains a square of blocks in one corner, displaying various coloured symbols. You must destroy a preset number of these tiles by throwing a similar block into the pile, but you can only hit and destroy tiles which bear the same symbol as the tile you are throwing.

If it is not possible for you to hit a tile like the one in your possession, then a miss is chalked up and you lose a life – lose all your lives and you are told that you have no moves left to take. However, there are occasional 'flash' squares which when they appear can give your lives a boost.

The gameplay of *Plotting* is simple enough and the graphics and sound are of the pretty straightforward, 'cutesy' type. Having said that, *Plotting* does have a sort of charm that makes it great fun to play. The early levels lull you into a false sense of security, so that you think "Oh, this is dead easy!" only to find that somewhere around just level six that you've managed to cut off all the green squares when that's bound to be your next target!

Getting through the levels is by no means an easy task, but even if you do (he says sniggering up his sleeve) there is the added bonus of a level editor, which allows you to create devious puzzles of your own, so that you can watch friends and relatives struggle.

***Plotting* may seem like 'just another puzzle game', but the sheer addictiveness is enough to give it an edge over many, more derivative, puzzle games that are around at the moment.**

Maff Evans

THE BARD'S BACK

Fans of the *Bard's Tale* series of fantasy role playing games will be pleased to learn that EA is soon to launch a new addition to the series. *Bard's Tale III: Thief of Fate* contains more spells, more monsters and even more dungeon levels.

The story goes that the fabled city of Skara Brae has been left in ruins. As the townsfolk celebrated your victory over the evil Mangar (in *Bard's Tale II*), his master, the mad god Tarjan, arrived seeking revenge and reduced the town to rubble. Skara Brae is only the first in a long line of cities which Tarjan has threatened to destroy.

Your job is to assemble a group of adventurers who will travel through this medieval world in search of Tarjan. During your travels you'll encounter monsters, magic and an assortment of associated medieval fantasy role playing thingies.

The game includes 84 dungeon levels and 7 different dimensions, with up to 500 monsters and 100 magic spells available.

Jason Holborn

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PC

DOSSING AROUND

A few weeks ago a copy of the latest version of DR-DOS arrived in the post, and I've now played with it enough to give a first opinion.

DR-DOS is Digital Research's version of MS-DOS, and claims to be 100 per cent compatible with Microsoft's product. Previous versions claimed this, but fell down often enough for the system to be limited to a few Far Eastern suppliers who bundled it with cheap clones because of its slightly lower price. With the latest version however, Digital Research has attempted to make DR-DOS 5.0 a significant improvement on the opposition.

It does feature a number of extended commands, and all commands have a help option if you add /h, but where DR-DOS really comes into its own is in the realm of memory management.

If you have a 286 or 386 machine with some spare memory over the 640K, you can get DR-DOS to load itself into extended memory; disk buffers and other DOS work areas can also be shifted out of the way, leaving upwards of 630K free! This can be extended further if you have a CGA or Hercules display, and almost 700K of DOS-usable memory is possible.

So far I've come across no compatibility problems at all, and DR-DOS seems an excellent alternative to MS-DOS for the memory hungry. DR-DOS costs £138 from Digital Research on 0635 35304.

SETTING UP

One of the nicest features of DR-DOS is its installation. Putting a new operating system on a machine is normally a frightening prospect; reformatting the hard disk is by no means uncommon. With DR-DOS all you do is put the master disk in the drive and turn the computer on.

DR-DOS boots from the disk and automatically loads the installation routine, which asks you whether you want to maximise memory or speed, or balance the two. Having made your choice it takes you through the autoexec.bat and config.sys files it recommends, explaining each option and allowing you to alter any you don't like. Finally it strips MS-DOS from your hard disk and puts itself in its place. A completely painless procedure.

Another product I've been looking at this week is similarly painless to install; the Microtext teletext adapter.

PAGE THE CEEFAX

The PC version of the teletext adapter has been a while arriving; versions have been out for other computers for several years.

It consists of a half-length 8-bit card with an aerial socket, which you plug into a free slot, and a disk of software which you copy to your working disk. After telling a setup program what display and printer you have, typing TELETEXT turns the PC into a teletext terminal, capable of picking up Ceefax, Oracle and 4Tel.

I can see this device being a hit with stockmarket types with the latest share prices instantly available on their PC. I haven't yet tested it to see if it will run in a multi-tasking window under Windows 3, but I see no reason why it shouldn't.

You can write scripts for the program which will automatically go to certain Ceefax screens and download the text to disk, and they can also be set to do this a specific time.

Perhaps more interesting though is the device driver Microtext provides which lets you write programs, in any language, which can access screens and download information. Share portfolio programs already exist for the ST which automatically keep track of your stocks, and PC versions will not be long coming. On a more down to earth level, horse racing and pools predictor programs could automatically keep themselves up to date.

The teletext adapter costs £195 from Microtext on 0705 595694.

PAN'S PEOPLE

My main computer is out of action at the moment; the strain of having dozens of pieces of review hardware and software installed seems finally to have killed it. So I went to the corner of the office where the newly-arrived hardware is kept to see if I could find a laptop to borrow to do some writing. There were two machines there; a Sharp and a Panasonic.

The Sharp, reviewed in this issue, is as near to gorgeous as a PC can get. It weighs less than an IBM keyboard yet has a VGA display, a 286 processor and a hard disk. This last is almost incredible when you pick the thing up; you simply can't believe that there's a disk in there. I was forced save a file and hold my ear to the casing to prove to myself that the C drive wasn't just a RAM disk.

But as soon as the Technical Editor saw me looking at it he shooed me away towards the Panasonic.

The Panasonic 350 is right at the other end of laptop computing. It's huge and heavy and not a lot of fun to carry any distance. The weight is added to by the separate battery pack and mains adapter, only one of which can be slotted into the machine at a time.

But on getting it home I discovered that all that weight had been put to good use. For a start it shifts a bit; a reasonably rapid 40Mb hard disk and a 386 processor see to that. Its LCD VGA screen is not the best of its kind, but it offers every display option you could ask for, including being able to plug in my EGA monitor to see some work in colour. There aren't many desktop VGA systems which let you do that.

With a keyboard plugged in to the external socket, a mouse in one of the serial ports and a colour monitor plugged in, it's possible to fold down the Panasonic's lid and use it as a fast desktop.

Also adding to the size and weight is the full-size 16-bit expansion slot which will take any card you like.

All in all then the Panasonic is an extremely powerful and versatile machine, which only suffers in comparison to other laptops which can beat it in size, but not in power.

The Panasonic 350 costs nearly £4,000 without the VAT, but there are cheaper versions. Panasonic is on 0344 853551.

SOME MISUNDERSTANDING

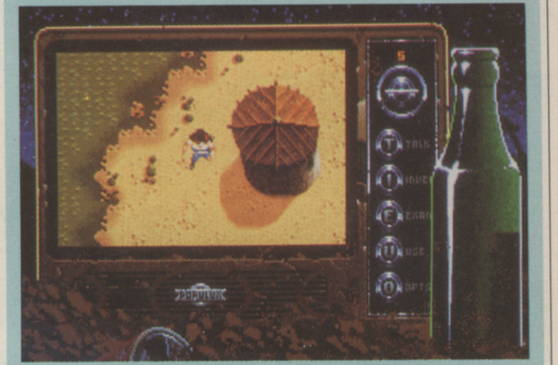
It appears that we got a bit confused with some press releases in the PC column a few issues back. We said that Bloc products were now being distributed by Software Toolworks – not so! In fact a few end-of-line products are being cleared by Toolworks, but Bloc is very much still being distributed by DLL on 0983 864674. DLL is the place to go for the latest versions of the handy *FormTools* and *FormFiller* utilities.

Stuart Anderton

BAD BLOOD

PC GAME of the WEEK

Origin • £34.99



'If the humes hack an attack, we're slag', 'swot Himmuk said, an' he's no spud. 'S why you're in bigbig trubb out on the plains now, hackin' at slaggin' a couple a Kejek arnies with yer oozee with a bushbug on yer tail.)S tuff bein' a tuff.

Origin has certainly taken a break from the fairyland world of the *Ultima* series with its latest release. *Bad Blood* takes place in a world devastated by nuclear holocaust, a world of 'searing wastelands, ramshackle towns, ravaged cities and hidden underground complexes seething with forgotten technology and mutated monsters'. Forget Lord British, here comes Mad Max and the Thunderdome.

Despite these differences, *Bad Blood* very obviously uses the technology introduced with *Ultima VI*, although in a much abbreviated form. Gone are the many attributes on which a character's performance depends, instead there is simply a bottle of water to indicate your state of health: once it's empty, you're dead.

It all goes to make *Bad Blood* a rather easier game to play, although there is still a very complex plot and an extremely intricate world for you to explore. The plot unravels as you talk to the creatures, mostly 'mutes' (mutants) or 'humes' (humans). Start with a simple 'chit-chat', or asking for the latest news, and if you're lucky a bleep warns you that the creature has mentioned something new, and a new 'keyword' has appeared on the 'Talk about' menu.

But it's the graphic system that really grabs the attention. The world may not be as big, but it is drawn in the same lavish detail – particularly on a VGA display. An excellent introduction to role playing games for those who find the scale of the *Ultima* series just a bit daunting.

Matt Nicholson

FAST COPYING

The COPY command must be one of the best reasons for using a graphical user interface. Time after time I try to copy a directory and get the response 'File not found', then discover I had typed COPY *.8. Why isn't the asterisk key near the full stop? Anyway, there is a much easier command for shifting around whole disks or directories of files which also works considerably faster and doesn't involve any *.*s: XCOPY.

XCOPY copies everything in one specified directory to another. So:

```
XCOPY \files \backup
```

would copy all the files in the directory 'files' to the directory 'backup'. If you don't specify a directory to be copied to, MS-DOS assumes you want to copy to the current directory. So to copy all the files on a floppy to the current directory just type:

```
XCOPY A:
```

Another handy feature of XCOPY is the option to copy all of the subdirectories as well, with the /s option. So:

```
XCOPY a: /s
```

will copy all the files on the disk to the current directory, even those tucked away in subdirectories on the floppy.

The XCOPY command is fast because it doesn't read a file then write it, then read the next and write it like COPY does; instead it reads as many files into memory as it can and then writes the lot in one go. With a lot of small files this is considerably faster.

XCOPY is an external command, so on a floppy disk system you'll need the MS-DOS disk in the drive to use it. Hard disk users need to make sure that the directory with the MS-DOS files in it is in the PATH statement in the autoexec.bat file, thus:

```
PATH C:\MSDOS
```

or whatever that directory is called. You can check by typing PATH at the C:> prompt; a list of the directories in the path will be shown. We'll explain the PATH command in detail next week.

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▼ Not beginner-friendly

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£293.25
A hefty 500 page manual teaches you how to use *WordPerfect*. A huge spellchecker dictionary and a thesaurus add to the bundle. Can call up a command line interpreter from within the program.

▲ *WordPerfect* is used on many machines so it's useful if you're familiar with it

▼ Expensive otherwise and lacks graphical commands

SPREADSHEETS

● SUPERPLAN

Precision 081-330 7166
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Comes complete with a tutorial disk to help get you started – all the functions you're likely to need in a spreadsheet and also has excellent graphics display which makes data more digestible

▲ Macro language allows keyboard configuration
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▼ Requires 1Mb of memory
▼ Awkward to use because of poor use of menus

DATABASES

● SUPERBASE 2

Precision 081-330 7166
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Simple to use, even for a beginner. Data can be imported from other files easily. Excellent data validation and useful help messages can be included. Mail merge facilities.

▲ Excellent tutorial files
▲ Graphics can be included and saved with the database

▼ Not cheap

● SUPERBASE PROFESSIONAL

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The most powerful relational database available. Designed beautifully so that setting up a database is simplicity itself. Also incorporates a 200 command word programming language.

▲ No limit to field size or number of records
▲ The Rolls Royce of databases

▼ Even less cheap

DESKTOP PUBLISHING

● PROFESSIONAL PAGE V1.2

HB Marketing 0895 444433
£129.95
Produces PostScript compatible files for use by laser printers and typesetting bureaux – can also produce colour separations. English, French and Spanish dictionaries in the spellchecker. Five magnifications including life size and 200 per cent. Probably the best and most sophisticated DTP package on the Amiga.

▲ PostScript compatible files
▲ Colour separations can be created
▲ Three dictionaries

▼ Requires 1Mb of RAM
▼ Two drives strongly recommended

● SHAKESPEARE

Cloudhall Ltd 0604 231 2111
£99
Clear and informative manual. Produces colour pages directly on colour printers. Has some problems with large documents so best used on single pages. Graphics can be imported and each retains it's palette. PostScript compatible.

▲ Ideal if you have a colour printer
▲ IFF file import

▼ No magnify function
▼ PostScript output is only in grey scale
▼ Graphics can't be edited on the page

● PUBLISHERS CHOICE

HB Marketing 0895 444433
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A combination of three programs: *Pagesetter*, *Laserscript* and *Kindwords*. The latter is a word processor with both a spellchecker and thesaurus – just in case you get lost for words. *Laserscript* is a utility for converting *Pagesetter* files to PostScript format and printing them. *Pagesetter* includes a mini graphics package to help the page creation process. Excellent manual.

▲ Includes powerful word processor – *KindWords*
▲ PostScript compatible
▲ Graphics capabilities in Pagesetter
▼ Font and hyphenation information not imported with text

➤

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● CITY DESK

Precision 081-330 7166

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A very powerful DTP package, but suffers a little from unfriendliness. Style codes are imported when the text is. Includes a simple graphics editor which can be used to create or edit IFF files for use on the page.

▲ PostScript output is supported
▲ Text can be edited on the page

▼ Lacks a WIMP environment

● PAGESTREAM

Silica Systems 081-309 1111

£171.35

Text can be flowed around graphics in most DTPs, but *Pagestream* has the edge in that respect – text can be flowed in many ways. Magnification is not limited to five sizes – you can work at virtually any magnification.

▲ Flexible text flowing
▲ Large and easy to edit spell check dictionary

▼ Difficult to produce colour separations

GRAPHICS

● PHOTON PAINT 2

Microillusions 0703 703030

£89.95

Art package capable of producing HAM images. Comprehensive set of tools allowing re-scaling, flipping, rotation, bending stretching and much more.

▲ Wide range of tools for image manipulation

▼ But some are very slow to use

● DIGIPAINT 3

Newtek/Precision 081 330 7166

£69.95

HAM art package with facility to create images up to 1024 by 1024 pixels – the only limitation being memory. Good text entry system which uses a buffer. Text is manipulated before it's put on screen as a brush. Friendly interface between package and user

▲ Good text manipulation
▲ Huge images possible

▼ No fill or airbrush
▼ Awkward magnify mode

● DELUXE PAINT III

Electronic Arts 0753 49442

£79.95

Excellent art package that allows use of full overscan and extra halfbrite screens. Simple animations can be created too – very easy to do. Stencil mode stops you from accidentally airbrushing over the wrong part of the screen.

▲ Perspective fill
▲ Halfbrite Mode
▲ Full overscan screen

▼ 1 Mb required
▼ HAM not supported

● FANTAVISION

Domark 081 780 2222

£39.99

Uses polygons to create animated objects and relies on tweening to create the illusion of movement. Full colour IFF files can be imported to make up the background scenery.

▲ Fast animated sequences that don't eat up much memory
▲ One object can be easily transformed into another

▼ Objects are silhouettes

● MOVIE SETTER

HB Marketing 0895 444433

£69.95

Uses a series of sprites to create animations which are more cartoon like in nature than Fantavision. Sprites can be brushes created with most art packages – they're in IFF format. Storyboarding makes it easy to use and see what's going on. Animation can be played, rewound and stepped through frame by frame.

▲ Minor changes to productions can be viewed instantly
▲ Sound is easily integrated

▼ Works best with 1Mb
▼ Eats up memory if not careful

● PIXMATE IMAGE PROCESSOR

£43

Allows pictures to be transformed from one form another – HAM can be reduced to 32 colour pictures for example. Images can be cleaned up, defocused, squashed or stretched.

▲ Converts images from one format to another
▲ Wide range of cleaning options

▼ But who the hell distributes it?

● X-CAD

Commodore 0628 770088

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Very fast re-drawing of images. Has great potential in the range and qualities of images that it can produce. Hardware requirements mean that you must be very serious about your CAD to justify buying it.

▲ Best CAD package available
▲ Fast
▲ Comprehensive

▼ Needs 2Mb
▼ Better with hard drive

● INTRO CAD

HB Marketing 0895 444433

£59.95

Extensive colouring routines enable realistic and detailed objects to be created. Easy to include text too. Ideal as an introduction to CAD

▲ Simple to use and much cheaper than X-CAD
▲ Excellent results can be obtained with a bit of skill

▼ Not as comprehensive as other packages

● SCULPT 4D

Amiga Centre Scotland 031 557 4242

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£24.95

Flight simulators are often dull and boring, but Interceptor is far from that. You're at the controls of and F-18 and have to accomplish many missions against hostile forces. The graphics are superb and the missions will challenge even an ace pilot.

● VIRUS

Microprose 0666 504326
£19.99

Virus was originally written on the Archimedes and was thought impossible on any other machine. The Amiga proved them wrong. You too can experience the wonderful graphics and varied missions as you fly around worlds, zapping and fighting for survival.

● DRAGONS' LAIR

Entertainment International 0268 541126
£44.95

It might seem expensive, but that's because it comes on six disks. Dragon's Lair was one of the first arcade games to use laser disk technology and it's even more impressive when you realise that your Amiga does it with no extras – just its memory and good programming.

● POPULOUS

Electronic Arts 0753 49442
£24.95

The fate of 999 worlds lies in the balance with you controlling the forces of good. Play god and create a world for your people to live in – not forgetting to destroy the minions of evil of course, before evil destroys your people.

LANGUAGES

● ARGASM

Argonaut Software
£59.95

The fastest assembler available. It's compatible with most other assemblers so you can just transfer a file to Argasm and carry on working.

▲ Very fast assembler
▲ Compatible with Devpac

▼ Can't assemble to memory

● GFA BASIC 3

GFA Data Media 0734 794941
£64.95

Amiga BASIC has it's good points, but if you want a more friendly and powerful language to program in there's GFA BASIC. It can be used as a standard BASIC, but to get the full benefit from it you need to use the more potent structured commands. It's compatible with Amiga BASIC too – so you won't have to start all over again if you convert a program.

▲ Fast Interpreted BASIC
▲ Structured language

▼ Requires compiler to produce stand alone code

● HISOFT BASIC

Hisoft 0525 718181
£79.95

A very fast compiled BASIC with a powerful text editor to make life easier. Instruction manual helps you through the tutorial programs. Can compile Amiga BASIC programs with no modification.

▲ Produces very fast code
▲ Compiled language

▼ No interpreter – you must compile in between each modification to the program – which wastes time

● LATTICE C V5

Metacomco 0272 428781
£241.50

C is the next best thing to assembly language when it comes to speed, and Lattice C is a very good implementation of C. Includes a powerful debugger for when things don't go right. Also has a powerful text editor for creating the code and two very hefty manuals.

▲ Good text editor
▲ The best and fastest version of C

▼ Price to match

MISCELLANY

● SUMMASKETCH

HB Marketing 0895 444433
£459.95

Graphics tablets are used commonly in CAD because they allow greater control than the humble mouse. Summasketch is a tablet for your Amiga which enables you to draw and scribble to your hearts content. Transferring technical diagrams is a doddle thanks to a widget with a crosshair and a pen.

▲ Crosshair and pen included
▲ Good alternative to mouse

▼ Damn expensive

● AMDRIVE

ASAP 0724 280222
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A 40 Mb hard drive for either the A500 or A2000 Amiga. Comes ready formatted. Can either autoboot from hard drive or boot from disk. Fast access to data on the hard disk.

▲ Fast storage system
▲ Cheap

▼ Needs Kickstart 1.3

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Rombo Productions 0506 414631
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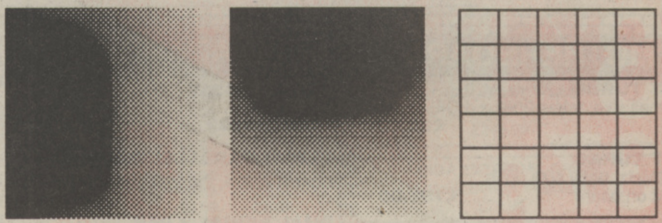

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be grabbed in real time. Basic unit grabs 320 by 200 images in 16 colours, but for a bit more cash you can snap 320 by 256 images in 4096 colours.

▲ Very fast mono image grabber
▲ Can play back a sequence of frames from memory

▼ Software incomplete

● VIDEO STUDIO

Maze technology 081 520 9753
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A complete post-production utilities package. Can be used as a video titler. IFF file import. Plenty of wipe/dissolve patterns to make things more impressive.

▲ Comprehensive

▼ Requires two disk drives and 1Mb RAM
▼ For best results will need a genlock

● DAY BY DAY

Digita International 0395 270273
If you have trouble remembering appointments then this could be the thing for you. It enables you to store and recall information on appointments at the touch of a key. Ideal if you use your computer every day.

▲ Month and week planner to remind you of things to be done

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● MINIGEN

Applied Systems Developments Ltd 0724 280222
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A genlock device which allows you to produce Chart Show-style overlays on your videos. Uses standard IFF files to overlay. Easy to use.

▲ Lots of software available to exploit Minigen
▲ Cheap

▼ Poor manual and introduction disk

● A-MAX

Entertainment International 0268 541126
£134
Why bother with a Macintosh emulator when you've got an Amiga? Because Mac DTP software knocks spots off anything on the Amiga. Admittedly you need at least 1Mb of RAM to do anything useful with A-Max, but a 1Mb Amiga is considerably cheaper than a Mac.

▲ Works with most Mac software

▼ Doesn't support hard disk... yet
▼ Need to purchase Mac ROMs too

● PERSONAL TAX PLANNER

Digita International 0395 270273
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▲ Menu driven
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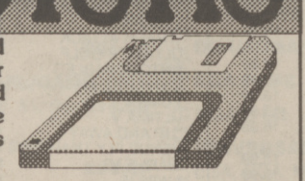

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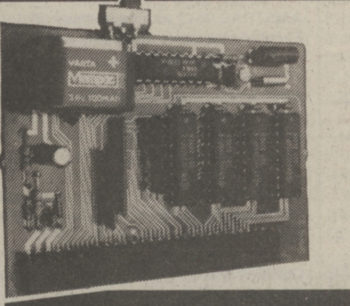

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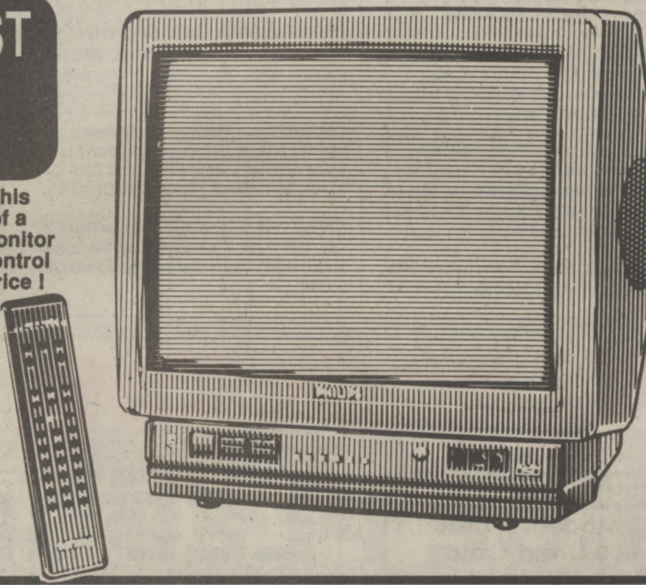

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FREE with all ABC-286 machines : Logotron '8-in-1 Professional' inc. W/Processor, Database, Spreadsheet, Graphics, etc.

- ☆ 80286 Processor with 8 Mhz clock speed
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- ☆ 1 RS232 Serial and 1 Parallel ports
- ☆ Disk controller supports 2 floppy & 2 hard drives
- ☆ One 3.5" (1.44Mb) floppy drive and a 30Mb hard disk drive fitted as standard
- ☆ Socket for 80287-8 Maths Co-Processor
- ☆ Video graphics adapter supports EGA, CGA, MDA and Hercules, with digital video port
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ABC-286 S.D./30Mb without monitor	**£ 803.85**
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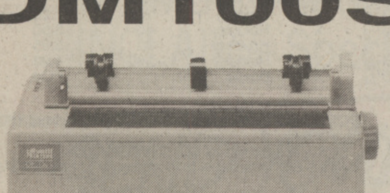

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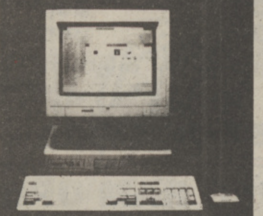
- ✓ 'Top 10 Solid Gold' Games package



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or, if you prefer, £129.95 inc.VAT allowance on another printer of your choice.

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PCS86 COLOUR	699.00 803.85	799.00 918.85	999.00 1148.85	N/A N/A
PCS286 MONO	N/A N/A	949.00 1091.35	1049.00 1206.35	1149.00 1321.35
PCS286 COLOUR	N/A N/A	1099.00 1263.85	1199.00 1378.85	1299.00 1493.85

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- ◆ 1 x RS232 Serial interface and 1 x Centronics Parallel interface
- ◆ VGA compatible (OVC) display controller fitted standard
- ◆ VGA monitors: 14" Colour / 12" Mono. (dot pitch 0.39mm)
- ◆ Socket for Optional Maths Co-Processor
- ◆ Hard Drive versions: 20Mb (27ms access time) / 40Mb (29ms)

Logotron 'Eight-In-One' package includes Wordprocessor, Database, Spreadsheet, Graphics etc. 'Top 10 Solid Gold' games pack includes Arcade, Adventure, Creativity, Simulation & Strategy titles.

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- ◆ NEC-V30 microprocessor 10Mhz clock speed, 0 wait states
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- ◆ Single or Twin 3.5" floppy drives with 1.44Mb formatted capacity
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ACCESSORIES

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ATARI STFM, loads of software (some serious), 20 blank disks, multiface ST disk organiser, 2 DS disk drives, Citizen printer, magazines, disk box, joystick, mouse, 4 player adaptor. Worth £1700 will sell for £650 ono. Tel: (0494) 712666.

AMIGA Publishers Choice, Prodata, DG Calc, DPaint II, £120 the lot. No split. Phone Southampton (0703) 336957.

SPECTRUM 128+2, over £600 software, joysticks, manuals, magazines all for only £270. Tel: (0284) 760651 for further details after 5pm. Software includes many latest titles.

CBM 64 Ultima IV disk only, with box, manuals, disks and Metal Ankh. Price £10. Phone Dave (0253) 869278 6pm. Price includes post.

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SPECTRUM +3 for sale. Multiface 3, datacorder, Tasword +3, games and other accessories. Contact Steve on (0908) 566568. The price £99 only.

AMSTRAD 464 with colour monitor and games, bundled with colour Polaroid camera and Record Call Answer Machine. All for £220. Call Alan, weekends 071-491 4278.

SPECTRUM 48K for sale. Works perfectly. Includes: manuals, forty games, tape rack, 25 computer magazines, leads. Buyer collects. Phone (0835) 23598. Ask for Andrew. (evenings)

ST-User magazines Feb '88 to June '90. 29 issues plus disks. Very good condition. Any offers? Ring Chris; Bath 337403 (home) - or 462090 (work).

AMSTRAD PPC 640K with "FREE" phone offer with all leads, PSU and some software. All for £350 ono. Contact Gary, 10A Watchmeal Cre, Faifley, Clydebank, Dunbartonshire, G81 5EA.

AMSTRAD 464 inc. Modulator 1 year old. Excellent condition. £700 worth of software inc. Robocop, Op Wolf, all originals. Call Jon on Lancing (0903) 762303.

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CUMANA 3.5" external drive in box £50. Discovery cartridge (ST) £55. 3.5" Int ST drive, half meg spare or build up £25. Samsung CD-Midi unwanted gift £110. Tel: Paul (0495) 301657 evenings.

STAR LC10 colour printer for CBM 64/128 complete with manual, cable and spare ribbons £140. Phone Bucks (0234) 240034.

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ATARI STE 2X1 Megabyte Simms to upgrade to 2 Megabytes. Never used £130. Tel: 707035 (Leicester). Ask for Mike.

C64 cassette originals, 100's of titles. Large SAE for lists to: Michael Vainola, 5 Woodside Cottages, Highwood, Chelmsford, Essex, CM1 3RD. Tel: (024548) 265.

FOR sale: Amstrad PCW 8256 computer, keyboard, printer boxed as new. £250. Tel (0895) 443589.

MAGAZINES 50+, Atari ST User, ST Format, Your Spectrum issues 3-21 plus others. £15. Tel: 061-338 4593 (Stalybridge).

ELECTRON 64K, Turbo, 5.25" drive, loads of games, mags, books £125. Bargain so no offers. Paul, 3 Moorend Ave, C'Wood, B'Ham, B37 5SD.

CPC 664, no monitor, no modulator hence £50 - cheap upgrade to disc? Many original software tape/disc from £1. Steve, 53 Royle St, Northwich, Cheshire.

AMIGA original software. Deluxe Paint 2 £15, Spritz £5, Kindwords £25, Marauder X-Copy £10, Aegis Sonix £35. Tel: (0628) 37763.

TANNOY M20 Gold Mark 2 speakers. Unmarked. £100. Tel: (0438) 729890.

C64 datacorder 1541, joystick, music maker, top software, disk and cassette games. Plus SB64 Future Finance. Some cartridge games, manuals, leads, £175. 021-308 5278 6-8pm.

PACE modem for sale £300. Series IV 2400S. V21, 22, 23, 23bis. Phone Shirley: Taunton (0823) 270348.

AMIGA A500, half meg expansion, second drive, 1084S Stereo monitor, DMP2000 printer, joysticks, over 100 disks, books, manuals, £700 ono. Leave message on (0742) 305748.

COMMODORE128, 1541 drive with Phantomdos, Action Replay, MK5.2. Hundreds of blank disks, magazines, software, utilities. Tape as well. Bargain at £220. Phone 081-965 1699 (Jez).

ATARI 520 ST with 1Meg fitted, 1Meg drive(NEC), SM124 mono monitor, EZ Track +, Trip-a-Tron, STAC and more. Dodgy 7 key hence £300. Ring 081-965 1699 (Jeremy).

INTELLIVISION cartridges; Math Fun, Word Fun, Reversi, Soccer £3 each or £10 the lot. Tel: M. Newman (0245) 268063 (home) or (0277) 264626 (office hours).

ATARI 520STFM, standard system, hardly used, some games, ideal for first upgrade, must sell quickly hence £150. Phone (0375) 856 759 and ask for Danny.

ATARI 520STFM, 1Meg external drive, A/B Boot switch, Blitz Copier, over £600 worth of games, joysticks, mouse, books £420. Phone 061-681 0709.

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F-29 Retaliator (Amiga) £15, Bomber (ST) £15, Protext V4.24 (Amiga) £60, DPaint I £7, Kawai K1 Editor (Amiga/ST) £69 each. Tel: (0526) 53329. Ask for Jason.

ST 1MB upgrade kit plus instructions £30. Tel: (0234) 857482.

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ENTERPRISE 128 with cassette recorder, mouse, mouse interface, art package, technical manual, various software, £95. Sega master system with gun, joystick £45. Phone (0375) 391 987.

ATARI 520 STFM 75+ games with education, art, WP, B/Up copiers, 2 joysticks, mouse, various leads all boxed very good condition. £275. Phone Chris (0322) 846170.

VIDI (Video Digital Interface) (Rombo) for Atari ST. Captures pictures from video or camera £50 ono. Good for artwork and DTP. Phone Richard 021-429 2410.

MANY back issues of New Computer Express. I am spring cleaning. Any offers? Phone for more info. Richard 021-429 2410.

ST software £6 each: B/Lamp, R/Runner, S/Trek, R Type, Flintstones, Terrorpods, Terramex, Bismark, I Ludicrous, Skrull, S/Cycle, Leaderboard, Afterburner, Garfield, Overlord, Soccer, Castle/Warrior, Time Scanner. Phone Dave (Reading) 663913.

ARCHIMEDES 440 with colour monitor, Riscos, 5 months old, immaculate, hardly used £1750 or offers. Tel: (0223) 242269.

PC engine and 12 games £300 ono. Sega megadrive with Ghouls and Ghosts and World Cup Soccer £180 ono. Tel: (0908) 216108 after 6pm.

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● HELP OFFERED

AMIGA AMOS and PD contacts wanted to swap software, code, ideas and problems. Disks/letters to: Nadeem, Oakhurst House, St Leonards Hill, Windsor, Berkshire, SL4 4AJ.

ATARI 8-Bit. Stuck on a game, write for help including name of game. SAE to: Dean, 138 Townsfield Rd, Westhoughton, Nr Bolton, BL5 2NT or phone 840725.

HAVING problems with your Amiga hardware or software? If so use the FREE Amiga Helpline. Send SAE for details: G Keenan, 61 Glenfinnan Rd, Glasgow G20 8JG.

● BBS

BBS starting soon, please send contributions, software, help Amiga to:- 36 Partridge Way, Chadderton, Oldham, Lancs, OL9 0NT. Tel: 061-652 1366, 10-10 ask for Fred.

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ATARI ST/STE disk mag, issue No 0, FREE! News, DTP, PD etc. Send disk + SAE to: Paul Sealy, 31 Hartfield Crescent, West Wickham, Kent, BR4 9DW.

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WAYNE needs help. Anyone in the know out there who can recommend good books or programming the Amiga. Contact Wayne, 50 Farren Road, Longbridge, Birmingham, B31 5HP.

I would like to get in touch with anyone 16-18 with an IBM PC or compatible. Michael Marshall, 48 Sunnyhill Road, Herne Bay, Kent, CT6 8LU.

DOES anyone know how to arrange a serial connection between a C64 and a Amiga? Tel: Jim (0524) 33553.

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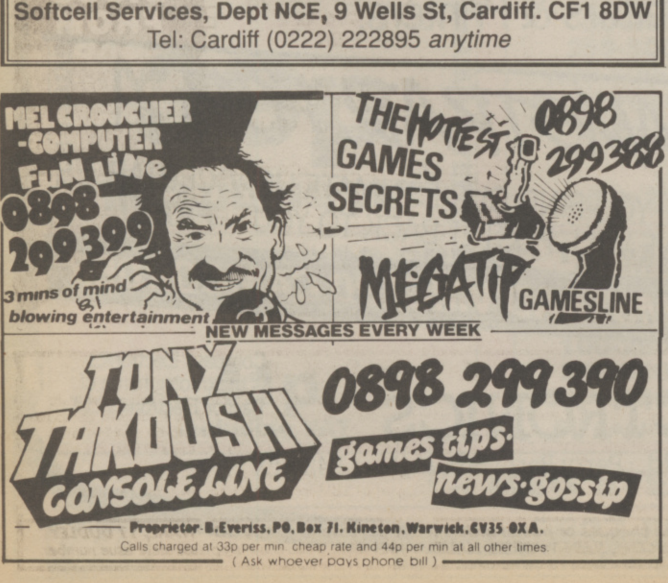

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THE PD COLUMN

There is a lot of software out there available for the price of a disk. This week Adam Waring turns his attention the Amiga and CPC, and some of the sources you can tap for PD information.

The problem with colouring books is that kids aren't very good at colouring things in. The carefully drawn outlines are ignored as the little brats scribble over the whole page with purple crayon. After the page has been filled then it's usually the walls that get the treatment.

Well now, with the help of your Amiga, you can put a stop to all this! Take a page out of Page One's colouring book, it was a licenceware program called *Colouring Book*. The idea is simple. Load in the line drawing of your choice, select a colour from the palette, and paint away. The colour spreads to cover the entire area. Even my little three-year-old brother could use it, with far superior results than a hand drawn mess.

A batch of pre-drawn pictures for you to fill in come on the disk, but if you're a fine artist yourself then you can come up with extra outlines with another art package.

Once you've loaded in the picture to paint, you are given a palette of 10 colours to choose from. Move the pointer over the desired paint pot and press the left button to select. The right mouse button toggles between the two screens. To fill an area simply press the left button again, and it will be flooded with colour. If you later decide that the sky would be better off blue than green, you can quite easily paint over previously coloured in sections.

Being licenceware, *Colouring Book* is slightly more expensive than real PD. Then again, the programmers behind the software get a quid for every copy sold, so the extra dosh is going to a good cause. *Colouring Book* costs £3.50 from Page One PD.

CPC

Are you taking your CPC seriously? Or are you just playing games when it comes to computing? If you'd like to put your plastic pal to more useful things then a disk full of utilities is a fine way to start.

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BEAM ME UP SCOTTY

An issue or two ago I mentioned a rather good-looking program that was hindered only by the fact that the instructions were written completely in German.

***Enterprise* is a *Star Trek* game, where you go boldly where no man has gone before, discover new and interesting alien life forms, and kill them. Probably.**

The text used throughout the game is as plain as a packet of ready salted crisps. It's only the vital game instructions that are gibberish to non-German speakers.

Apparently the German programmer had the smattering of English necessary to put in the in-game info, but the task of translating pages and pages of complicated instructions was simply too much.

I expect you're wondering what all this is leading up to. Well, Amiganuts has informed me that it has had authorisation from the programmer to translate the information file into our own fair tongue.

So, if you want the English version of *Enterprise*, get in touch with Amiganuts on 0703 785680.

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272: Wordwright. A PD wordprocessor
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ies as assemblers, cut down CAD packages and bits and pieces like tape header readers and the like. Many of the programs have been taken from the hallowed pages of that rather wonderful magazine *Amstrad Action* (available from all good newsagents at the remarkably low price of £1.45). So it may be worthwhile if you missed out on the issue with that wonderful type-in, or maybe you just can't be bothered to type it in.

Header Reader will give you all that valuable information about the type of programs on a tape. It'll let you now things like file size, type, and whether it's a protected file or not. It'll even show you a graphical representation of where the program sits in memory.

Mcrash will help to keep your program away from the prying eyes of Multiface users. It's a subroutine that can be tagged onto the end of your own programs, and detects the presence of the Multiface. If it finds one it simply crashes the machine, erasing all trace of the program from memory.

464 owners who are fed up with their machine not being able to run certain BASIC programs will like *Copychr$*. As you'd expect, the program emulates the COPYCHR$ command that's only found on the 6128.

Azerty translates your CPC keyboard into French. Our continental cousins use a different keyboard layout to us, which can be a bit difficult to get used to. So if you use any foreign software, it could be just the fix you need. ※

MORE PD

Every week this column informs you of some of the very best PD software around. However, if you're interested in expanding your own collection, then where can you get more details of stuff to suit your machine?

Being a general column, I try to offer information on PD for as many machines as possible. Only a certain amount of space can be devoted to each specific machine. Future Publishing, who produce *Express* also publish many other titles, covering virtually every other computer around. Most have some kind of public domain section.

CPC owners will find *Amstrad Action*'s 'Free For All' section very informative. Two whole pages are devoted to the subject every month. It has all the details of what's happening in the Amstrad PD scene. As well as regular reviews of the PD that's vital to your collection, Caroline Lamb, the writer behind the column, presents her own forthright views.

If you're a 16-bit owner, then the magazines *ST Format* and *Amiga Format* may just be your cup of tea. As well as the several pages on our favourite subject, each issue has a free disk mounted on the cover. And, you've guessed it, there are PD programs a plenty for you to try out.

Talking of Formats, a spanking brand new magazine is about to see the light of day. *Commodore Format* is about to become Britain's bestest, brightest magazine for the Commodore C64. And editor Stevie J has promised that PD will feature prominently in the new mag.

Business type people may find *PC Plus* and *8000 Plus* worth a look. Although neither has a regular PD section, they do cover it occasionally, sometimes running quite comprehensive articles on the subject. And of course, as well as the public domain coverage in all these magazines, they're a damn good read too. ■

SEND IT IN!

Does your PD library have software so hot that it's cutting your fuel bills in half? Then we'd like to see it. We want your best stuff, preferably on disk. We cater for all the major formats, and a few more besides, so whatever machine it runs on – send it in!

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Our address – as if you didn't know – is:

The PD Column, New Computer Express, Beauford Court, 30 Monmouth Street, Bath BA1 2BW

WHERE TO GO

Page One Public Domain, 46 Hillport Avenue, Porthill, Newcastle, Staffs, ST5 8JZ. Page One are is an Amiga public domain library, so take a page out of its book. Most of the disks are £2.50, whereas the licenceware will set you back an extra pound.

Robot PD, 2 Trent Road, Oakham, Rutland, LE15 6HF. Robot provides PD for your CPC. And what's more, it's pretty cheap stuff. Just send 45p for a cassette or disk full of all the latest PD, but remember to enclose a blank tape or disk and an SAE. Alternatively send it one hundred pennies, and it'll supply the tape and postage.

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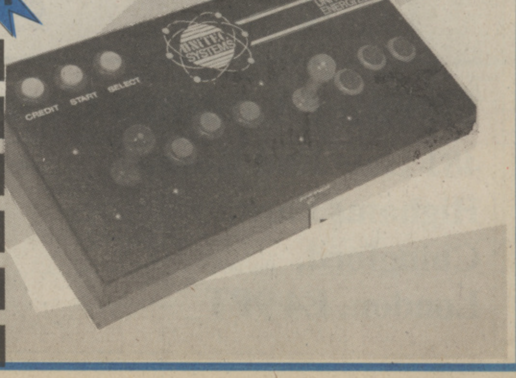

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The ABC has a host of impressive features, all built-in as standard, encouraging simple installation and ease of use. In addition, the ABC's small footprint and quiet operating, mean that you will notice it less on your desk than other PC's. Except, of course, when you begin to take advantage of its AT power.

At its remarkably low price point, the ABC is ideally suited for home, office and educational use and will take full advantage of the vast range of PC compatible software. And, with 12 months FREE on-site maintenance (8 hour response), you can rest assured that your ABC will be fully supported.

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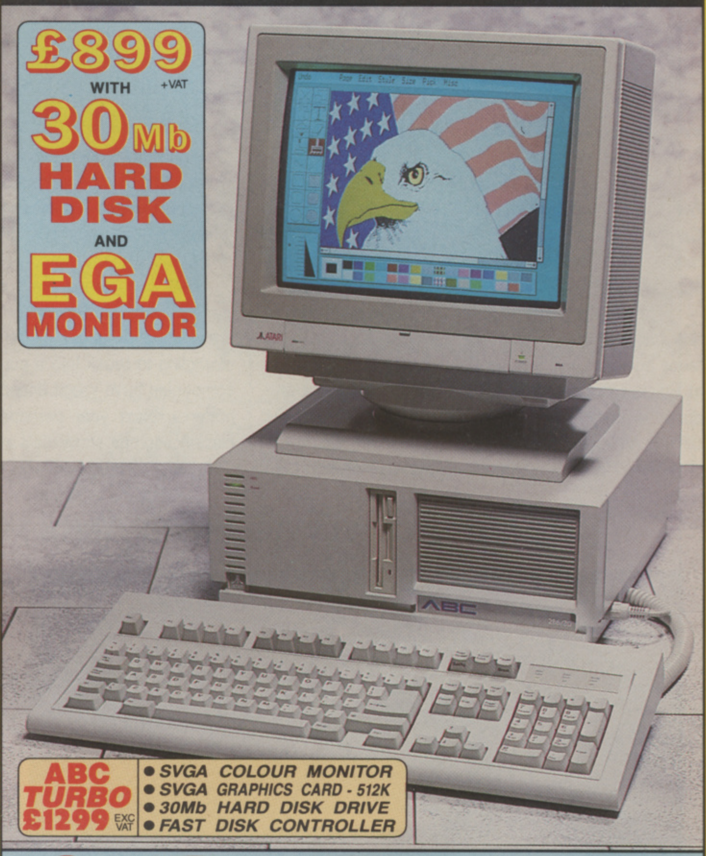

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THE MOVING PICTURE S

Last week saw the third annual Amiga Animation Festival. brian Larkman was there and saw the winning graphics.

The Edinburgh Festival is the perfect place for the annual Amiga Animation Competition. It is the largest and most prestigious gathering of art and culture in the world, and its 'Fringe' is the mecca for every alternative and up-and-coming art form known to humankind.

Right at the fringe of the fringe was the 3rd Amiga Animation Competition staged, as usual, by The Amiga Centre Scotland. 38 competitors exhibited work that ranged from the ugly and crude to Eugene Messina's superb *Main Video*, the ultimate and obvious winner.

The judges were Andrew Ball, Commodore's press and public relations manager; Donald Holwill, a freelance animator and lecturer in animation and illustration at Edinburgh College of Art and Leslie Mitchell, a producer of corporate television programmes who uses several Amigas in his work.

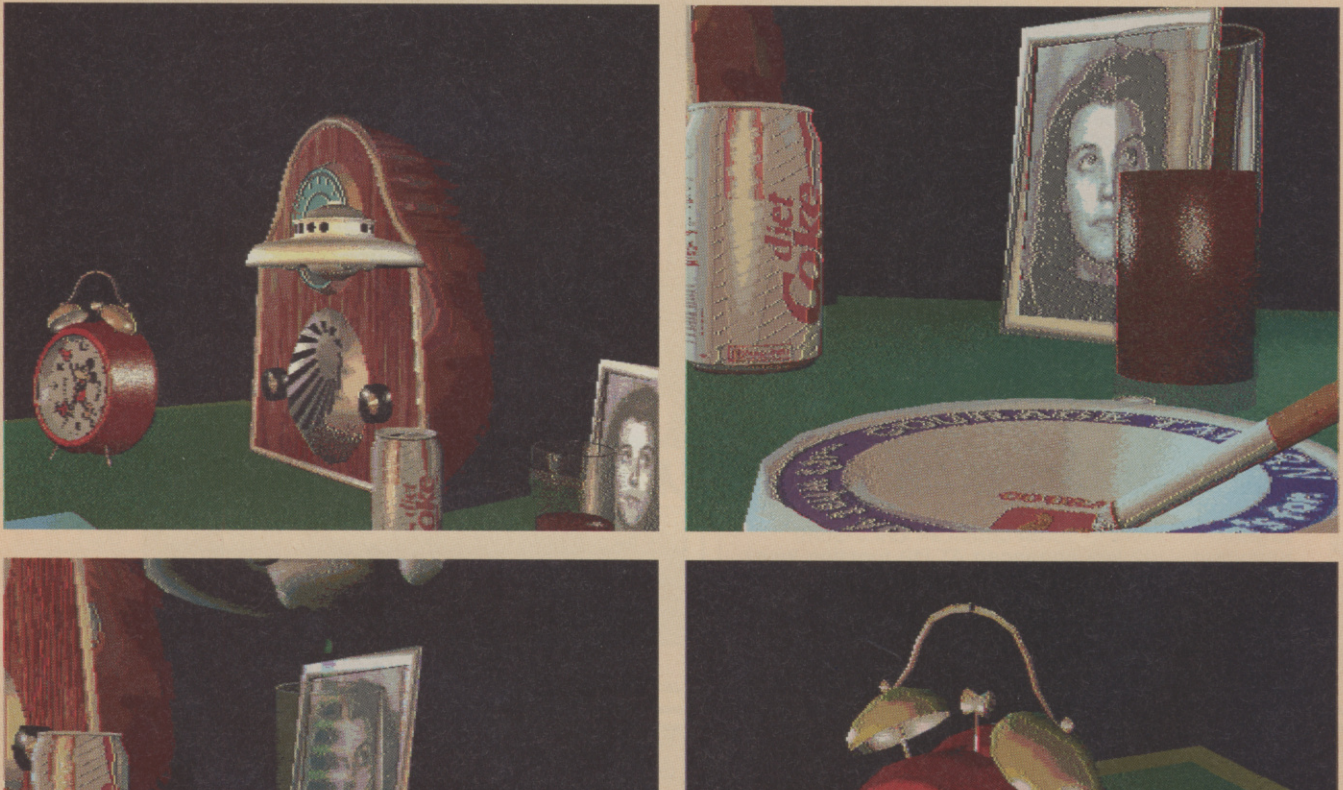
The 11 prize winning animations were chosen from a surprisingly poor selection of entries presented on video and disk. The judges considered that most of the professional work – predominantly show-reels of corporate video – was on the whole rather boring and derivative; just how many more flying logos can we take?

Still, considering the subject matter, this decision was rather harsh. Several of the companies concerned are groups of ex-art students or amateurs who are struggling to break into a cut-throat area where the big companies have mega-finance and still produce boring material. Next year perhaps there will be a special classification for show reels and corporate videos.

The amateur work was also rather disappointing, showing an overall lack of imagination, even including one of the *Deluxe Paint III* tutorials! Maybe there were just not enough entries. Nevertheless the prize winning animations show just what the Amiga can do.

Jason Gee's *Nature Calls* for example is a long unfinished animation sequence derived from about 2,000 hand produced line drawings on paper; digitised, line-tested and coloured in *Deluxe Paint III*, and recorded onto VHS video. This combination of traditional and computer techniques looks like being the only way that traditional animators will move over to computer animation. The struggles of Gee's dog to get the door opened for the 'call of nature' is accurately

AND THE WINNER IS... EUGENE MESSINA'S MAIN VIDEO



• A sequence from the winning animation, Main Video by Eugene Messina. The original pictures in the sequence were in HAM format; these have been simplified to 32 colours.

SHOW

observed and well animated. He won *Real 3D Pro* and *ImageLink*.

Like *Nature Calls,* Kalle Karlsson's *Information About AIDS* is a traditional 'illustrative' animation executed in 2D using a computer. Nevertheless the subject has been dealt with in a unique way so that the action is enhanced rather than dictated by the computer techniques used. Karlsson won *Real 3D Beginner, Deluxe Video III*, and *Deluxe Music*.

In contrast, *The Trans-State Run* by Scott Johnson is completely computer generated using *Sculpt-Animate 4D Jr*. It has a simple and rather boring theme – a police chase of a red Ferrari-like car – but the smooth, carefully choreographed movement of the vehicles and camera take it out of the ordinary.

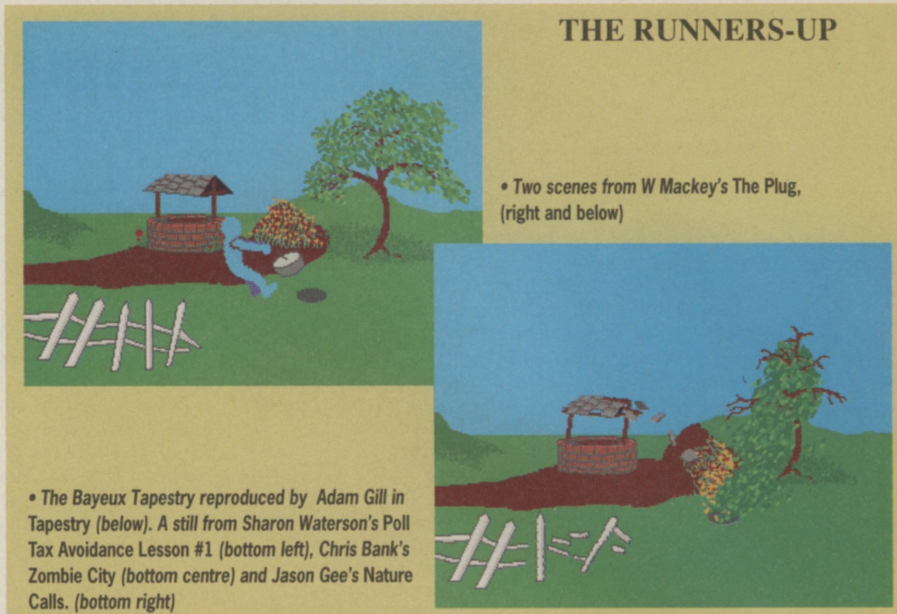
Far and away the best however is Eugene Messina's *Main Video*. He will receive an Amiga A3000. Again, this is completely computer generated using *Turbo Silver* and recorded in five second sections onto a domestic VHS recorder using a modulator. The plot and scene are really very simple, but the execution is so clever that a very strong atmosphere is evoked just with lighting and camera moves.

The scene is a desktop, illuminated fitfully by a green-glass shaded desklamp with a bad connection – or is it an unknown electrical disturbance! Around the desk is just darkness.

The camera swoops smoothly and almost lovingly around a series of mundane objects on the desk, beautifully modeled and texture-mapped by *Silver:* an ornately framed photograph, a Coke can, a glass of Coke, a Micky Mouse alarm clock, an ashtray nicked from a pub. Suddenly a small UFO appears, hovers above several objects, absorbs or transmutes them, then disappears.

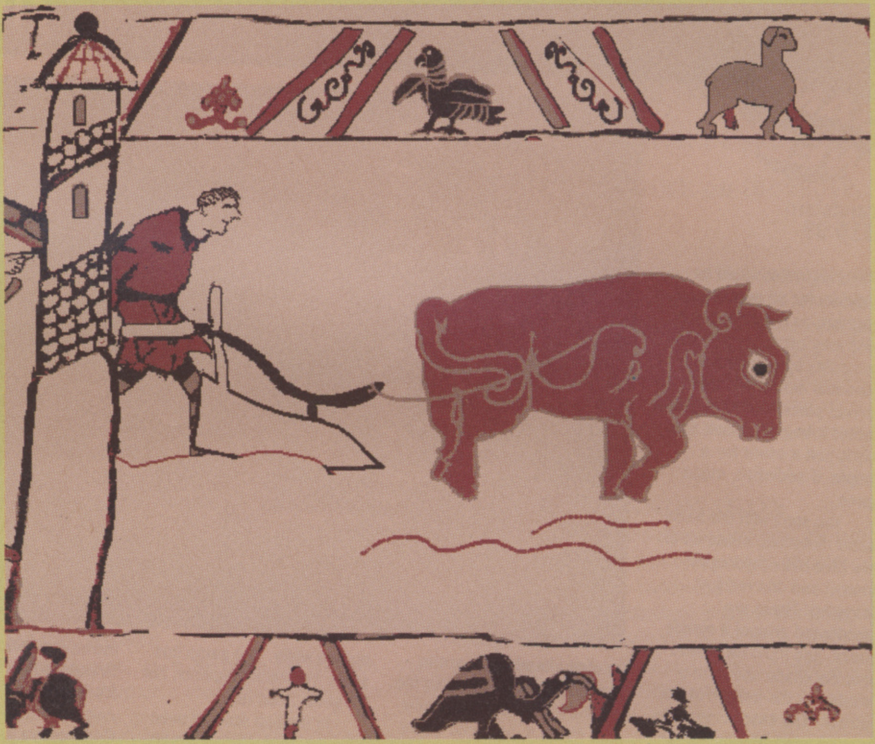
The other prize-winners were:- Chris Blackmore with *Motorway* and *Recursive;* Chris Banks's *Zombie City*; Art McKendrick with *Exit Anim*; W Mackey for *The Plug*; Adam Gill for his original ideas in *Tapestry;* Kevin King with *Aqua-Snoopy*; and Sharon Waterson for the only genuinely funny animation in the competition, *Poll Tax Avoidance, Lesson #1*. ■

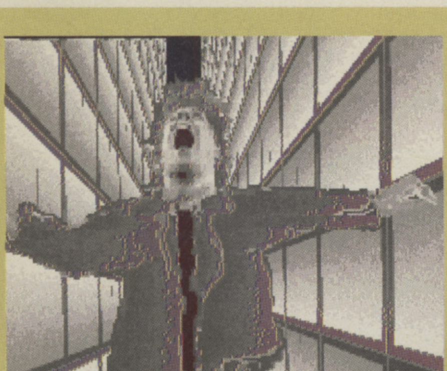
THE RUNNERS-UP

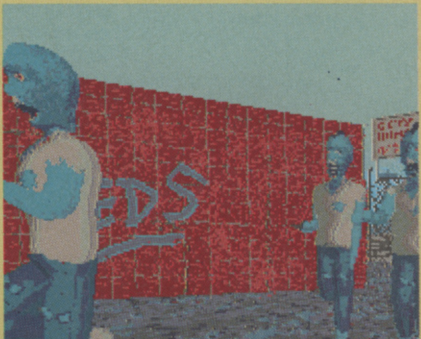


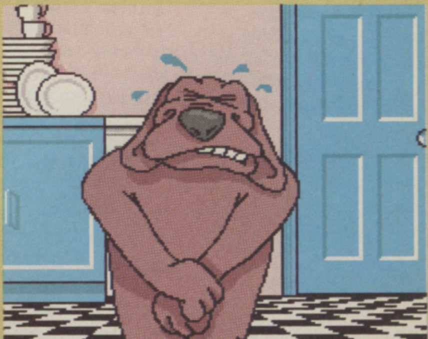
• Two scenes from W Mackey's **The Plug**, *(right and below)*

• The Bayeux Tapestry reproduced by Adam Gill in **Tapestry** *(below). A still from Sharon Waterson's* **Poll Tax Avoidance Lesson #1** *(bottom left), Chris Bank's* **Zombie City** *(bottom centre) and Jason Gee's* **Nature Calls**. *(bottom right)*









The right chemistry

Oh boy have we got one for you this week; well, to be specific we have 25 for you, 25 copies of Thalion's highly rated *Atomix*. And if that isn't enough we are also offering 10 runners-up prizes of, chemistry sets – stink bombs ahoy!

For those grown-up souls out there who think that computer games mean inane shoot-'em-ups or complex simulations, think again; *Atomix* is an absorbing molecular modeling game.

You are shown a molecule in the lower left-hand side of the screen, your task is to recreate the molecule in the main screen. Sounds easy really, the only problem is that you can't actually control the placement of the atoms, you have to steer them until they hit obstacles. There are 30 levels of this of this.

Amiga Format had this to say that about the game: "Neat, simple, highly addictive and very playable. A great little game that fans of *Xor* and *Pipe Mania* will love."

ST Format said this: "If you're the kind of game purist who wants absorbing gameplay rather than flashy graphics, them *Atomix* is going to keep you perched on the edge of your seat for hours. *Atomix* is undoubtedly one of the most engrossing puzzle games to ever hit the ST."

Just to show that we take an interest in our own competition, *Express* said this: "This is a wonderfully addictive challenge which in many ways is more appealing than *E-Motion*. The puzzle element here is much more thought provoking and you don't need to be a master of the joystick to win. *Atomix* is one of the most engrossing puzzle games ever."

This competition is open to anyone who buys this issue of *Express* – and we know whether you've bought it because this very page has been coated with a special film which detects non-paid for copies.

In the event that you cut out the coupon below, write your name and address on it, answer the two easy questions and send it into us here at *Express,* without having first paid out 58p for the magazine, you will be visited by six large members of the local Order of the Aardvarks bearing switchblade trousers, if you see what I mean, and I think you do.

The two questions you need to answer are as follows:

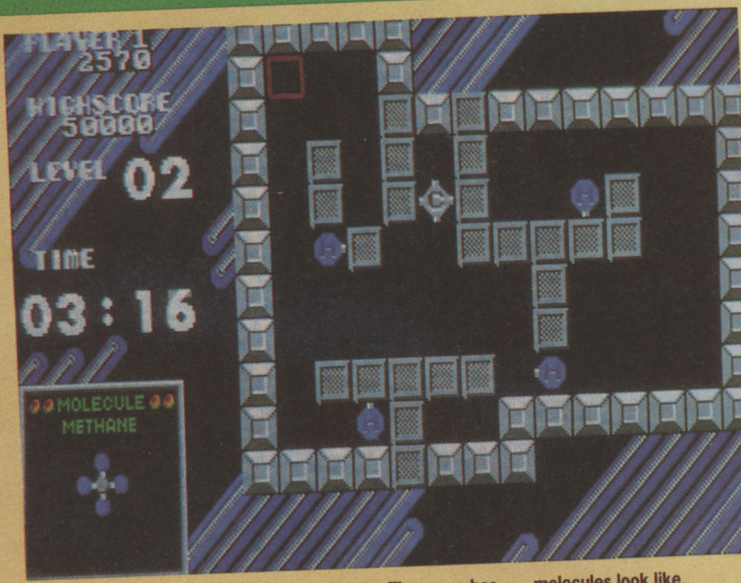
1) What is the chemical symbol for Iron?
- A) Ir
- B) Fe
- C) St

2) Who invented the Bunsen burner?
- A) R F Bunsen
- B) W W Burner
- C) R W Bunsen

The address to send the completed coupon to is: *Atomix* competition, *New Computer Express*, Beauford Court, 30 Monmouth St, Bath, Avon BA1 BW. Entries should be received no later than Monday September 10 and that's 1990. The first 35 entries to be drawn from the deputy editor's wide brimmed fedora will win the prizes. The editor's decision is final. Exotic postcards more than welcome. ■

ATOMIX

PC GAME of the WEEK



Grandslam
• £19.99

At first sight this could be mistaken for an educational program, as the object is to build ever more complicated molecules by manoeuvring individual atoms into their correct place. But after a few games it begins to look like this is just a cover for a simple, if addictive, maze game.

You start with the basic water molecule, made up of two blue balls (hydrogen atoms) and one red ball (oxygen). These are distributed around a simple maze, and must be moved into the shape shown in a window at the bottom of the screen. The catch is that the maze has no friction – once started in a particular direction the balls don't stop until they hit something, either a wall or another ball.

This is the secret of the game, and means you have to plan ahead if you are to stand a chance of solving the puzzle before the timer runs out. Finish it, and your score is totted up and you move on to a more complicated molecule. Fail, and it's back to the water molecule again. There are 30 levels in all, so it should keep you busy for quite a while. The game has some frustrating aspects, but it's good clean fun.

In the end it could even be quite educational. It may bear no relation to the way molecules actually come into being, but after a good session you certainly remember what the various molecules look like. Grandslam certainly thinks it's educational – the company is giving away a Commodore Amiga to the first chemistry teacher to finish 20 levels, and £100 to the student nominating the teacher.

Matt Nicholson

WINNERS

The winners of the *Yolanda* competition were:

Robert Brooke, Dewsbury, West Yorks; Mark Krason, London W4 (hope the son is happy now);M Jones, Skelmersdale, Lancs; Mr C Jung, Colindale, London; J Vanags, Mansfield, Notts; Simon Dick, Bexley, London; M A Richardson, Wallsend, Tyne and Wear; Douglas Anderson, Culloden, Inverness; Benjamin Williams, Earlsfield, London; AJ Northcote, Winnersh, Berks; Angela Day, Bradford, W Yorks; D Brown, Northshields, Tyne and Wear; T McLaughlinm Danestone, Aberdeen; Shaun Pugh, Horsforth, Leeds; Mr Kenneth Anderson, Edinburgh; Miss E M Dron, Sutton, Surrey; Hugo Crossley, Oakham, Leics; Mr P I Burnham, Penrith, Cumbria; R E Treadwell, Helston, Cornwall; M Graham, Gravesend, Kent.

Jolly well done.

NAME ....

ADDRESS ....

....

....

MY COMPUTER IS: AMIGA ☐ **ST** ☐ **PC** ☐ **C64** ☐

FORMAT: 5.35-inch disk ☐ **3.5-inch disk** ☐

The answer to question 1 is .... **The answer to question 2 is** ....

ATOMIX
MS-DOS
3.5"
CGA / EGA / VGA
THALION

TIME FOR A SHARP EXIT

• *Sharp's tiny laptop: would you believe there was a hard disk in there?*

...with a computer in your hand. Portable computing remains a dream for most people, even those owning 'portables', but Keith Pomfret tried out an amazing machine from Sharp which lets you work on the move.

The courier seat of a coach travelling at 70mph along the M4 is hardly the ideal place to review a computer, but the fact that this review was typed in that very place is testimony to the claim that the Sharp PC-6200 is truly portable.

The 6200 is a AT with a 80286 processor, 640K of RAM and a 20Mb hard drive. Yet it is smaller than a sheet of A4 paper and about an inch thick. If the machine is to be used both in office and mobile, there are a series of expansions and peripherals from Sharp and third party suppliers that effectively turn it into a desktop AT.

A hinge along the rear reveals a perfectly usable keyboard of the fashion now often used in laptops. The keypad is embedded in the right-hand side of the traditional QWERTY layout and accessed by a special function key. The row of function keys isn't full sized but as they see less use than the main keyboard, this isn't a problem. For those who do a lot of numeric entry and cannot manage with the embedded keypad, there's a port for connection of a numeric keypad.

In the top half of the 'clamshell' is an LCD screen with VGA display and contrast, brightness and inverse controls provides a stable although sometimes dull display. With crisp almost paper white LCD displays currently available, there's no excuse for dull displays, especially not from a company called Sharp. The hinge allows the screen to be set at a comfortable angle and the backlighting can be set to the optimum level.

NO FLOPPY

The first thing that is readily noticeable is the lack of any floppy disk drive; instead there is a tiny 2-inch 20Mb hard disk. When the review machine arrived, the only way to loading software was a good quality serial cable. A connectable floppy drive is available, but for the review comms was the order of the day.

The lack of any floppy drive was a little disconcerting, but backing it up to the desk PC and using the supplied *Laplink* or the more elegant *Fastwire* soon had the necessary applications loaded. Anyone wanting to use copy protected software would need to invest in the optional floppy drive.

IN USE

The 6200 is heavy enough to use on the lap in a moving vehicle without making constant dives to the floor at every bump, but light enough to carry in the hand or a case. There isn't a carrying handle but the machine is light enough to be gripped in the hand. Unlike some of the current generation of notebook PCs, the 6200 will not fit in the pocket but this is a plus, leaving space for a decent sized keyboard.

On the desk, on a BR table on the train, and perched on the lap on a coach the keyboard was fine. The keys have a good response and aren't too close together to cause difficulty to a touch typist. The small cursor cluster is a little fiddly at first and doubles up as a Pg Up, Pg Dn, Home and End cluster, activated by the same function key that controls the numeric keypad. This key also brings the Num Lk, Scr Lk, Prt Sc and F11/F12 keys into use. Dual function keys are a necessity in a computer as small as this but those which aren't accessible without activation aren't ones which would be used often in a frenzied bout of touch typing.

Using a word processor, where there was a lot of contrast, the 6200's screen was excellent but in programs where the transformation from multi-colour to greyscale involved several colours of a similar hue, the display was difficult to read, especially in direct sunlight. This shouldn't be taken as a severe criticism, but I feel that a bit of tweaking by the manufacturer could improve the display quality. All other aspects of the display were good with a screen refresh rate quick enough to handle the animation of a railway simulation game.

After using the 6200 for 140 minutes or so, the nicad battery pack was ready to curl up its toes. The indicator gave ample time to save work before an enforced power down. The battery pack is removable but without a spare pack, any work saved to the hard drive is effectively imprisoned until the mains adapter is attached.

This problem manifested itself when miles from home (and the charger) with urgent work on the machine. This feature means that either the charger has to be carried around, spare battery packs must be bought or military planning of trips and use must be indulged in.

NO BANDWAGON

The Sharp notebook computer is obviously the product of a well thought-out plan and not just an attempt to jump on the sub-laptop bandwagon.

The easy to understand manual works its way through the features available on the 6200, explains file transfer and *Laplink,* then sets aside a couple of chapters for the expansion of the system.

Sharp provides various routes of expansion, including extra battery packs, expansion units for add on PC cards, disk drives (3.5-inch and 5.25-inch), a numeric keypad, RAM card and CRT adapter.

In a surprising change from manufacturers' tendency to place head in sand when addressing third party peripherals, Sharp has included a chapter on the options available.

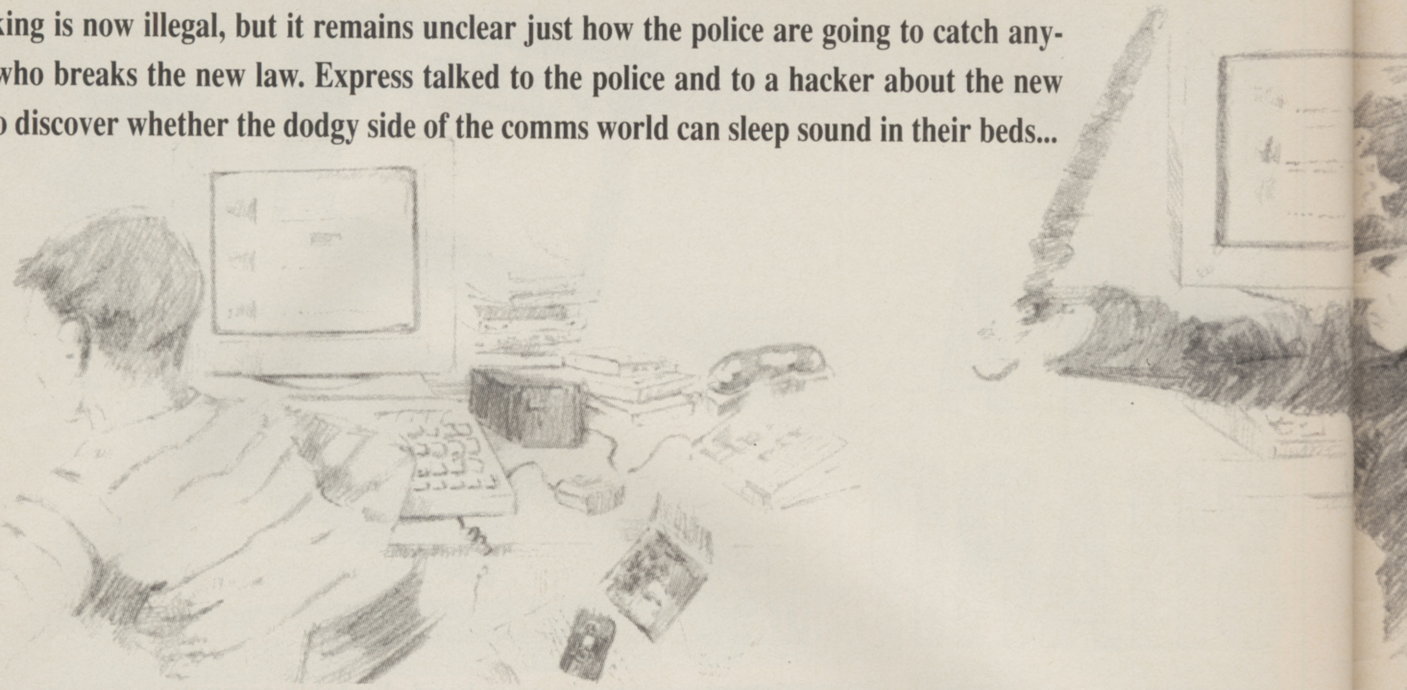
The PC-6200 is the centre of a system that allows true computing on the move yet can be used as the core of a desktop system. Its ease of use and expansion potential make it the most desirable notebook on the market today. ■

PRICES

Sharp PC-6200	£3,041
3.5- or 5.25-inch disk drive	£241
CRT adapter	£92
Expansion box	£517
Battery pack	£138
Keypad	£57

Sharp is on 061-205 2333.

Hacking is now illegal, but it remains unclear just how the police are going to catch anyone who breaks the new law. Express talked to the police and to a hacker about the new act to discover whether the dodgy side of the comms world can sleep sound in their beds...



Be it enacted by the Queen's most Excellent Majesty, by and with the advice and consent of the Lords Spritual and Temporal, and the Commons, in this present Parliament assembled, and by the authority of the same, as follows:

A person is guilty of an offence if a) he causes a computer to perform any function with intent to secure access to any program or data held on any computer and b) the access he intends to secure is unauthorised.

A person guilty of an offence under this section shall be liable on summary conviction to imprisonment for a term not exceeding six months....

So starts the Computer Misuse Act 1990, finally rendering hacking illegal. But already, with the act in force for only a few days, there are those who claim the act will be unworkable and the police need more powers in order to catch those responsible.

To find out whether or not the act will stamp out hacking, or prove to be lip service to the computer security lobby, *Express* talked to a policeman in the Metropolitan Police's computer crime squad, and to an accomplished hacker turned computer consultant.

THE FRAUD SQUAD

We met Detective Sergeant Donovan in the Fraud Squad's offices in London.

Q. There is a reluctance on the part of many of the subjects and victims of computer fraud to actually expose those frauds, certainly in some of the big finance houses, where they fear creating a lack of confidence. What would you say about this?

A. We've had no concrete evidence to that effect, but I expect that to be very likely, yes.

Q. How will you ensure a flow of information?

A. Well, as with any other crime, it's not our job to go out looking for crimes; it is for individuals to report crimes if they choose to. Just the same as somebody who is raped, they don't have to report it if they don't want to

Q. But surely the law enforcement agencies have a very considerable interest where absolutely massive forms of fraud are concerned?

A. There is an awful lot of hype that goes around about computer fraud, but we have a unit here who deal entirely with computer crime and the figures that are reported to us do not suggest that there are millions of pounds involved.

Q. How many officers do you have in your unit?

A. Four, a Detective Inspector, myself, a Detective Sergeant, and two Detective Constables.

Q. Detective Inspector is the third lowest rank in the Metropolitan Police or any police force, is that right?

A. Er, yes.

> *There is a wide range of hardware and software and no one person can be an expert in all of those matters, least of all a police officer. But what a police officer is an expert in is the investigation of crime.*

Q. Is this a measure of the attitude of the police towards computer crime?

A. No. The computer crime unit is part of the fraud squad and the fraud squad deals with complex or high value frauds. If frauds are investigated here they involve a lot of money, so if a half a million pound crime was reported here, it would not be considered a substantial fraud and that might well be investigated by a Detective Constable.

Q. How long has your unit been in existence?

A. Since 1985.

Q. What training have your officers undergone?

A. The Detective Inspector who first came here went to an FBI Academy.

Q. Are any of them computer science graduates?

A. No, but all of the officers have been to the Bramshill National Police Staff college and have undergone a course there.

Q. That only lasts four weeks, doesn't it?

A. Yes.

Q. Do you think that that is adequate?

A. It is sufficient to give officers a starter for ten in understanding technology.

There is a wide range of hardware and software and no one person can be an expert in all of those matters, least of all a police officer. But what a police officer is an expert in is the investigation of crime, and what he needs from a computer course is a background so that he can understand the technology.

Q. How many officers attend that course at any one go?

A. The course now caters for 12 officers with three courses running a year.

Q. How do the fraud squads in other constabularies respond to reported incidents of computer crime if they don't have a computer fraud unit?

A. Your question is better directed at those forces, but what I do know is that at least one officer in every police force has been trained on the Bramshill College course and that officer has normally been on the fraud squad. So they do have an officer who is trained.

Q. In the past constabularies would call upon Scotland Yard for an experienced murder investigator to go to their constabulary and pursue the murderer. Do you think this will happen in the case of computer fraud?

A. Other forces often contact us for advice, and we give advice, but you mustn't blow this out of proportion, this computer crime and make it out to be something so terribly terribly difficult. Of course it's complex and of course it's technical but the officer does have available to him a number of people throughout the country who are experts in various computer systems.

HOW WILL THEY CATCH THE HACKERS?

For example, if we were to go to the scene of the crime where a particular computer hardware was used then we might contact an expert in relation to that particular hardware. Police officers are not computer operators or experts in that field, only the investigation. We use the expertise of others to give technical evidence in court.

Q. Do you think therefore it might lead to some constabularies bringing in private security companies?
A. There are very few private security companies that have the experts. Lots of people set themselves up as computer consultants but the first thing we do is ask what qualifications they have, and there are many that have no qualifications whatsoever. For an expert to be an expert in court he has to have qualifications in his subject. So no, I do not see our police forces bringing in private security companies.

Q. The training received doesn't sound very much in light of the technical background of the people who have been involved in computer fraud. You are all experienced CID officers aren't you?
A. Yes.

Q. Do your officers move around to other parts of the police force?
A. Yes, but having said that the force is looking towards setting up a core posting. That is not force policy at the moment, but all of the officers on the computer crime unit have been here in excess of what is considered the norm for a specialised operation posting – three years.

Q. Do the experiences you have picked up make you invaluable in this new field of crime?
A. Ha, ha, ha. I would like to think we were invaluable but I don't think anybody is irreplaceable. It is a specialist unit within a specialist organisation, because by its very nature the fraud squad is considered to be a specialist operation. We are to my knowledge the only unit in the country that has such a computer crime unit.

Q. There are no others?
A. I don't think so.

Q. Is computer crime on the increase? What figures are there?
A. There are no figures on computer crime. Until now there has been no legislation that deals with computer crime, so the person responsible has been charged with criminal damage – therefore the statistics show that an offence of criminal damage has been committed. The statistics do not show that that was a computer crime, but once the Computer Misuse Act becomes enforced then figures will be available.

Q. Previously offences relating to computer fraud were dealt with under a number of statutes, for instance the Theft Act?

> *Some have been embarrassed by the fact that they have been the victim, but nonetheless they have still reported the crime. Presumably there are others where embarrassment has stopped them from reporting the crime.*

A. Well Section 13 is obtaining property by deception, but it would not be usual to charge somebody with that because you cannot in law deceive a machine.

Q. So the new act has come about because of the failure of these previous acts, would you say?
A. No, I think that the new law has come about because there has not been a suitable law to deal with cases of unauthorised access.

Q. I wanted to ask you about an unusual element of computer misuse and it relates to the police force themselves. You are probably aware that in the past some police officers have been convicted under the Official Secrets Act for giving out information stored in the Central Police Computer?
A. Yes.

Q. Can you confirm that the new act would cover an officer, for instance, altering information about a criminal's record within the Central Police Computer?
A. If the alteration that he made was a modification to the contents of that computer, and the modification was unauthorised, then he would be guilty of an offence.

Q. So whereas previously they have been convicted under the Official Secrets Act they would now be dealt with under the new Computer Misuse Act?
A. Yes, but there are always cases of altering information on computers that could have been dealt with under other statutes anyway.

Q. Is all computer fraud insider crime, is it the disgruntled employee or the manager with esoteric knowledge of how his particular company works, or is there a dedicated bunch of criminal hackers who will invade someone's system?
A. There are certainly people who hack into other computer systems, yes, and equally there are disgruntled employees, so both aspects are covered.

Q. Are there more hackers or more employees?
A. It's a bit difficult to answer because hitherto hacking itself has not been a criminal offence. But for a number of years, hacking has been known to our unit to be going on.

Q. Will you find the new act workable?
A. We've got to wait and see. It is brand new legislation and it is not really possible to say whether or not it is going to work until time has told us.

Q. Is it possible to give us a scenario of a typical investigation in brief?
A. Not really because no two investigations are the same.

I suppose it would be common for somebody to sit at home with their own computer and modem and gain access to somebody else's computer. ➤

Q. And how would you pursue that particular crime?

A. Well the same way that we would any other crime. You could perhaps equate that with somebody going in unauthorised access to somebody's house and stealing property. Then there is a procedure that the officer goes through in that investigation. I'm sure you wouldn't expect me to go into the technical aspect of how we actually detect offenders.

Q. Some areas of fraud involve very considerable sums of money. They are usually perpetrated on banks or building societies. Are they reluctant to give you access to their computers and things of this kind?

A. No. Those that to date have reported crimes have been most helpful in assisting us with the investigation.

Q. There has never been any fear on their part that to expose their particular systems to you?

A. Some have been embarrassed by the fact that they have been the victim, but nonetheless they have still reported the crime. Presumably there are others where embarrassment has stopped them from reporting the crime.

Q. In America a number of law enforcement agencies have turned around hackers where they have discovered somebody who has penetrated their systems. Instead of arresting and charging them they have used them to give guidance and education, if you like, to the enforcement agencies on how they perpetrated particular crimes. Have you any experience of that here?

A. In my experience with the United States authorities people who have committed crimes have been prosecuted. As in all cases in all police forces throughout the world there are people who give information to the police about the activities of others and they may themselves be hackers or who have been hackers in the past. Perhaps you can tell me of somebody who is actively hacking that the police are not prosecuting and are simply giving them immunity in order to get information?

Q. Certainly I know of a number of cases in the United States where this has occurred, where they have actually put together a team of hackers. They are used by the police to penetrate systems and to give guidance and education to their officers who are involved in the same line of work as yourself. I know certainly of some cases in this country where hackers have been detected by private companies and have been used by those private companies to explain to them how they have cheated and defrauded them and have done so on the basis of non prosecution.

A. Well that may be true, because simple hacking has hitherto not been an offence. Now it is perhaps companies will take a different attitude.

Q. I think I'm right in saying that the police themselves could not offer immunity but, the office of the Attorney General, or the Director of Public Prosecution or the Crown Prosecution Service might be able to do so.

A. That's right.

Q. Could you perhaps foresee a situation in the future where it might happen.

A. It would be very rare for a person to be given immunity from prosecution for an offence that he has committed unless his evidence was going to be extremely valuable in a subsequent prosecution. The immunity would only relate to the particular offence that had been committed it would not relate to offences committed in the future.

Q. What are your views of the penalties under the new act?

A. The police do not normally involve themselves with the penalties, because the penalties are really nothing to do with the police.

It is Parliament who creates the laws and Parliament who set the penalties.

Q. Do you consider them sufficient to deter?

A. Well there is a maximum sentence of five years for some of the offences – that's quite a substantial term of imprisonment. If somebody is given a conditional discharge, when perhaps they should have received a

BIOGRAPHY OF A HACKER

Maynard Wilson (not his real name) doesn't look like the stereotyped hacker. This slight, dapper character in his early thirties with a conservative two piece pinstripe and regulation briefcase and umbrella could easily be mistaken for a junior partner in a firm of city accountants.

When we interviewed him, he visibly winced at the term hacker, preferring 'computer security consultant.'

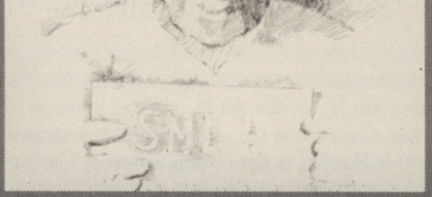
"Don't put me in the same league as Whiteley, Schifreen, Gold and all the other fame seekers," he said. "I have a job to do that I quietly get on and do without demanding curtain calls, encores or notoriety. I only agreed to talk to you people to get the record straight."

So what is the record that need straightening? Wilson doesn't see himself as the as the romantic pirate of the phone lines and looks with disgust at those who claim notoriety. He's a hard-nosed businessman selling his services to a waiting market.

Wilson is 35. Just too old to have done a computer course at the southern secondary modern where he received his sketchy (his word) education. With half a dozen CSEs he scraped into the civil service as a clerical assistant and busied himself filling in forms and generally clerically assisting. By diligence, he rose a couple of grades and with cash in hand was able to buy a couple of first generation home computers.

"The ZX80 was good for learning how computers work. It is a simple machine and with the extra RAM it taught me the rudiments of computing" he said. "I bought a Commodore C64 when they came out but that was a games machine – until I got a modem from a cousin in the States. The phone bill was £341 one quarter and I had to overdraw my bank account to pay it."

He paid the phone bill and 'dabbled' in the more serious side of comms, learning more about computers when he transferred to a computer branch in the mid Eighties. By then his knowledge of computers and comms was phenomenal but he chose to hide his light under a bushel, realising that any overtures he made in the regimented civil service would be either slapped or watered down.



"I wanted to travel around computer systems freely without the hindrance of a vocational requirement," he said. "At that time there were a few amateurs leaving 'Brian is a rubber fetishist' type messages on the terminals. They thought that they were clever but like Singh, Whiteley, Gold and all the other children, all that they did was vandalise the systems and make people aware that they should increase their security."

Wilson chose a different direction. "With these acts of wanton vandalism appearing in the papers, companies were beginning to get worried. They had no way to police their systems so they turned to the manufacturers. The IBMs and ICLs of this world are the most guilty in the whole picture. Rather than pay good money to block up their colander-like computers, they lied to users telling them that their system was secure. Now in 1990, I have yet to see a secure computer."

Tragedy in Wilson's family left him with no parents but with an unexpected inheritance. He decided to take a risk and gave up his reasonably paid job.

"I bought every book I could on every system that existed. I used to con my way into seminars, ring up computer system managers pretending to be from the manufacturer and cull information on their system. In one year I had two rooms full of print-outs, manuals, books and so on. All of this became expensive and the inheritance dwindled. I was down to my last few quid and it looked like I'd have to eat humble pie and get a job. I got a piece of luck. A local firm wanted someone to run their computer system. I had to hire a suit from Moss Bros to attend the interview. The MD was worried about being 'spooked' and had a healthy paranoia about his competitors hacking into his system. I got the job and he got a shock when I turned up in a lumber jacket and jeans. The suit had gone back."

Wilson burst out laughing as he remembered the 'spooks'.

"I got into the computer and found that it wasn't attached to any phone lines at all. It couldn't have been hacked in the conventional sense anyway. It was a mainframe and in those days there was a suite of 'user friendly' software called *MUSIC*. It was a series of programs that included the original collosal cave adventure.

"All of this guy's employees were tying up computer time and memory throwing axes at the nasty little goblins. The game took up over 300K of memory and with 20 people playing it the system slowed to a crawl. I erased *MUSIC* and picked up a hefty bonus."

That was the mid Eighties and since then word of mouth has left Wilson in demand by a number of companies accross the country.

Although he works for companies as a freelance systems man, he openly acknowledges that he lives in a grey area. "I have got over 90 per cent of my intelligence and data by devious means and often when I take on a contract, I know that some of the work will involve sailing close to the legal wind. Then again, the rewards make it worth it."

higher sentence, then the prosecuting authority can now appeal.

Q. Would you prefer stronger powers for, say, phone tapping?
A. We are not allowed to tap telephones under the provisions of the new act.

Q. The police have always been empowered to approach the Home Secretary and ask for interceptions on telephone
A. For serious crimes.

Q. Emma Nicholson intends to add new clauses to the Criminal Justice Bill. What improvements to the current act would you like to see included in them?
A. The Criminal Justice Bill does not relate to any specific offence. It is vehicle for introducing new powers to an already existing act or indeed to create new statutes.

I think that it is too early to say at the moment whether the Computer Misuse Act will be enforceable or not. I do envisage some difficulties in its enforcement but I think in fairness we will have to wait and see how we get on. If it's not then we can attempt to seek additional powers.

Q. So, after the due passage of time, it could be appropriate to see if additional police powers were necessary?
A. Yes, certainly one of the things we would be looking at closely is to see if the powers that we do have at the moment are sufficient to enforce the act properly.

Q. How would you go about bringing a hacker to justice who is outside your jurisdiction? Someone hacking in from the States or the Continent or something.
A. The act is quite clear on that problem of jurisdiction, it is no longer a problem. If the victim is in this country or the hacker is in this country attacking somewhere abroad, then jurisdiction lies in the United Kingdom.

Q. But how would you bring him to justice?
A. We would attempt to extradite him.

Q. Is there a danger from terrorism from computer misuse?
A. There must be a danger of terrorist activities with the use of a computer yes.

Q. Do you have any experience of this for instance?
A. Not on our unit, no.

Q. Does the anti-terrorist unit liaise with you over any particular matters?
A. I think that is a question you should put to the anti-terrorist unit.

Q. How do you keep yourself up-to-date?
A. Homework, basically.

Q. Do you subscribe to journals?
A. Yes. There are a number of organisations that send us details of modern equipment that is coming out, equally we read magazines, newspapers.

We have a very large number of contacts throughout the IT industry in all sorts of fields, who we regularly communicate with.

We are asked to give presentations on computer crime and make contact with people, so it is a constant learning game. ■

THE HACKER'S REPLY

Q. What do you reckon to the Computer Misuse Act?
A. There are four policemen in the whole of the Met whose task it is to look for computer fraud. The regional forces only have a couple of bobbies seconded to that sort of work and none of them know a byte from a blunderbuss.

To give it perspective, imagine a city the size of Birmingham with two policemen responsible for policing car theft. It's enough to send you running down to B&Q for a cordless drill isn't it? *(Cordless drills are car thieves current tool.)*

Q. What percentage of hacking will the police stop?
A. They'll pick up a few loud mouthed amateurs and publicity seekers, but no-one who matters. Until the companies and institutions get over the embarrassment factor and start reporting the crime nothing will happen

The police will only move if a crime is notified. With Austin and his three chums covering the entire Met, they don't have much time to go looking for it.

Q. People are regularly getting caught for messing about with JANET (Joint Academic Network) and the rest. Doesn't this show that awareness by systems managers is on the increase?
A. Let's get this straight. JANET is a whore. It's a system designed to be accessed by students and other puerile life-forms and as such is about as secure as a paranoid schizo. Only an amateur would break into a place that you can walk through the door of anyway.
The real systems don't have helpful log ins, normal baud rates and expected protocols. The majority of places worth seeing couldn't be accessed from a standard modem and phone line. A lot of the interesting stuff lives on private phone lines and before you can look at it you need to 'scan the line' to find out how it's being sent.

At this point, he opened his briefcase and revealed a comprehensive 'computer security kit consisting of a baby laptop, miniature modem, cell phone, oscilloscope, antenna, fax machine and assorted diagnostic tools. He gestured at the open case.

That's insured for over £5,000 and it's the absolute minimum that a professional can get by with. But it's still like a car without an engine. You need to know what computer, what system and most important you need on-the-ground intelligence to operate."

Q. Does the prospect of being put in prison worry you.
A. Who by? If I jump on the ferry at Newhaven, dial into a system on my cell phone, spend a couple of hours downloading information to a computer, then get off at Dieppe, how are Austin and his trio going to catch me?

The only way they'll catch me is when I'm doing the research before the entry. Then it's not a case of logging on to anywhere, more a case of paying a visit and there were already perfectly servicable laws to stop that anyway.

Q. What do you see as the far reaching effects of the new law?
A. I think that the police will have shot themselves in the foot by serenading the new act in.

There's an old saying about glass houses and stones and after all one of the most commonly perceived computer misuses is of the police central criminal computer.

Q. Would you like to enlarge on that
A. Not really

Q. It's a serious allegation which ought to be substantiated
A. I'm not in the business of biting a hand that can potentially feed me.

Q. Do you know of misuse of police computers?
A. It depends what you call misuse. A company taking on security guards may very well feel that it is a good idea to get a local friendly police officer to run a few applicants through the computer to weed out the wicked.

It might even help the police in the long run. They'd have less villains on their patch.

Q. Do you know that this abuse goes on?
A. Change the subject.

Q. What about insider hacking.
A. Disgruntled employees have been tapped for info by rival firms, but a professional would never use one. Why pay a moron to make a mess of a job that you can do elegantly yourself?

Q. If you don't work at a firm, how can you be an insider?
A. If you know enough about a system it doesn't take too long to get what you need. The biggest companies are easiest. No-one can know everyone. You can wander around large sites and buildings for so long without getting challenged that people get to know you. I even played for a company darts team once. I do miss subsidised canteens!

Q. Don't you do that any more?
A. I don't need to I'm well known enough to pick my work. I like the jobs that have me on the inside working out. it's less risk although some of the more active contracts are well paid.

Q. What's an active contract?
A. A firm might bring you in to tighten up on their security with the offer of a substantial contract. That's only a taster to try you out. They are paranoid about people hitting their system, but will rub their hands with glee if your intelligence brings them info from their competitors.

Q. What about the geographical implications of the latest act?
A. It makes the act unworkable. If I hack into a place in Oban from Cornwall, how long will it take the Oban coppers to mobilise the Cornish police and get me lifted even if they know I'm in immediately I log on?

Cell phones make it easier and the availability of cross continental phone lines make it a doddle. If I hack from Lichtenstien what can they do?

Q. Won't Interpol help?
A. It helps if you understand that Interpol is essentially a bureau not a task force. It is a shared bureau that police forces in different countries can use for intelligence, but on its own it has no teeth and is slow and unwieldy. And it isn't invulnerable from hacking.

Q. Do the police offer amnesty in return for help
A. Not that I know of. That wouldn't be the British way would it?

Q. In a sentence, can you sum up the effects of the new act
A. It is a piece of legal crap that will catch a few minnows and without monitoring every telephone exchange they've no chance of even getting spratts or minnows

Q. How much do you earn out of this game?
A. A lot. Over £30K in the last year, but half of that was cash. I only worked about 20 weeks to get that.

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TECH TIPS

Does your PC keep packing up? Is your Amiga less than friendly? Would your ST try the patience of a saint? Write to Keith Pomfret's Tech Tips and we'll soon see you right. Send your sorry stories to Tech Tips, Beauford Place, 30 Monmouth Street, Bath BA1 2BW.

■ HELP! New life for old

I have a US model 2-year-old Datamedia Corporation Telerate machine (Model 1700 T1E) with steel case, motherboard, PSU, modem and video cards, and a blanked off hole at the front for a floppy disk drive. I think it was junked by a city dealing room.

My question: Can I make a computer out of it?

P Sinden, London

Sounds like a lovely piece of kit, but not something for which I have the technical manual lying around the office. My experience of people's attempts to extract life from second-hand dedicated kit is that it rarely works. Far better to :

1) Offer it to a collector (yes, they do exist).

2) Cannibalise it. Many a good CRT, RAM board etc has come from an old machine.

3) If you have your heart set on using it, write to the company who manufactured it for specifications and help, or to one who still uses them.

The simplest project to undertake that involves the sort of kit that you possess is a terminal for comms. Many ex-corporate computers find a second life welded to a modem.

■ TIP! Biggest bigot

In reply to A Dales' query in *Express* 93 regarding a software package that will allow Russian and English characters, the reply is very simple:

1. Sell the Amiga
2. Buy an ST
3. Buy *Signum* II with the relevant fonts

Being an Amiga bigot you will no doubt not print this. Having used both, unlike most of the morons in the "my computer is better than yours debate". I still prefer the ST.

P Bates, Derby

And you're entitled to your own opinion too. You have targeted an area in which the ST outshines the Amiga, unless of course any of our other readers know different?

For the record, I am not an Amiga bigot, preferring the Apple Macintosh as a machine to work on, the Amiga and PC for recreation and my trusty Apricot F1 and Amstrad CPC for comms. I have to admit that an Archimedes is the machine to which I aspire though.

■ HELP! Memories

A while back, a guy wrote into *Express* saying his STE coped with 2.5Mb by mixing the SIMM modules and, in some adverts (and the Atari manual), they say that configuration is impossible. Which is true?

Geoffrey Chan, Kingston upon Thames

The wireheads on our sister magazine *ST Format* confirm that although it is possible to do, it involves patching the operating system to 'fool' the STE.

It's the sort of soldering iron and pliers project that we wouldn't recommend to anyone who had to ask how it's done.

■ HELP! Lending library

Thank you for providing me with a brilliant magazine! I am writing to you with a few questions about the Public Domain (PD).

1) My friend and I are about to start up an Amiga PD library and we were wondering if you could tell us if it would be OK for us to ask customers to provide their own disks until we get going.

2) We are going to charge around 80 pence per program/demo. This does not include the disk (as stated above) but does include p&p and other minor charges.

3) Which do you think sells the best, demos, games or utilities?

PS. Please keep up the good work on the mag!

R Donaghey, Strabane, Co Tyrone

There are so many established Amiga PD libraries already that you'd have to offer something special to catch the attention of the discerning buyer. Many current libraries have thousands of high quality disks and huge advertising budgets to help sell their wares.

Warnings over, you can ask people to supply disks but you may find them more willing to go to libraries where this forms part of the service.

You cannot charge for PD software, only for the copying and postage. If you sell it, you are breaking the conditions assigned by the author when it was placed in the public domain.

All PD sells well as long as it's high quality and original. You wouldn't find many sales for a fractal generator as they're common as houseflies but a good shoot-'em-up, utility or demo would probably be popular. The other problem you would face as a PD library is that as PD software can be copied by anyone, any original program would soon end up in other libraries.

Talk to one of the more popular PD libraries, such as George Thompson Services or Seventeen Bit. I'm sure that they will warn you of the many pitfalls in this line of business.

■ HELP! Single driver

Please help! My time in front of my computer is at an end at the moment. I have a Tandy 1000EX with one disk drive. The problem is using programs that require the loading of two disks. After loading the first disk and attempting to load the second, the screen either goes blank or the message RUN TIME ERROR appears. Please please help!

Gordon Mackie, Lochgelly, Fife

A phone call to Tandy confirmed that the only sure way of curing the problem is to weld another drive on externally. Your manual should give you the pin configuration to allow you to have a lead made up for a proprietary drive. If you want to source the drive from Tandy, you could give its parts back-up line a ring or even drop them a line.

The phone number and address is: Tandy National Parts, Bilston Road, Wednesbury. Telephone 021-556 6101.

■ HELP! Membrane dead

I bought a Sinclair QL three years ago to learn to program in 68000 machine language, but after several fruitless months of trying to find a 68000 assembler I gave up and banished the QL to the loft. I recently found myself in need of a word processor and, remembering that the QL came with one in the form of *Quill*, I dug it out of the loft. However it seems to have developed a fault in the keyboard because when I type, it produces garbage. Also my copy of *Quill* has died.

Could you tell me where I could get the keyboard fixed (I think its the membrane that's died) and how much it would roughly cost? Where could I get another copy of Quill from? Also could I connect the QL to a Star LC-10?

David Froggat, Sheffield

0753 888866 is the magic number that you need to sort out all problems of a QL nature. The company in question is EEC and boss Bill Richardson is the acknowledged guru of Sinclair's 8/32 bit baby. It is possible to weld the computer in question to the Star Printer and the good people at EEC will run a copy of *Quill* to ground for you although they may recommend a better word processor.

■ ADVICE! ARM v TT

You might like to point out to your colleagues in the news department of *Express*, that an Arc equipped with an 30MHz ARM 3 (or a FOX, that is an Acorn R260 or R225) could easily outrun Atari's TT, albeit at a greater price than the R200 arrivals which were recently announced. Further, you might like to tell them that even if Atari's 32MHz TT is faster than 4/8MHz ARM 2 based Archimedes then the power/price ratio is still won hands down by the A3000.

How about a plug for CC's Laser Direct printer?

C Eason, Leamington Spa

I might like to point it out but it seems that you've done it for me. As for the plug, I thought that particular printer had one already fitted.

It's true that the Unix Archies often get forgotten about. There are so many machines chasing that 'budget high-end' market that you have to ask who is buying them. Do you know anyone with a TT, Amiga 3000, R260 or even the new IBM RISC machine? I thought not, still they are good for stats swapping.

➤

■ The SAM Coupé – desirable machine or lemon?

More of your Coupé quips and queries.

Is the disk controller in my Coupé peculiar to the SAM, or is it a generic device that I can get information about from a third party? I want to utilise a couple of 5.25-inch DS/DD drives that I have spare, (MGT doesn't answer the phone any more).

The controller is the VL-1772-02. It is a well documented and oft-used disk controller and, as it was originally designed as a 5.25-inch drive controller, you shouldn't have too much trouble persuading it to talk to your drives.

The way that the Coupé is designed will allow you to connect straight in through the slots designed for the disk drives and run your drive cables back out under the keyboard without any modification.

VL-1722-02 pinouts

1	Chip select
2	read/Write
3	Address 0
4	Address 1
5-12	Data access lines 0-7
13	Master Reset
14	Ground
15	Power (+5V)
16	Step
17	Direction
18	Clock
19	Read Data
20	Motor On
21	Write Gate
22	Write Data
23	Track 00
24	Index Pulse
25	Write Protect
26	Double density enable
27	Data request
28	Interrupt request

Alan Miles and Bruce Gordon stink. Talk about abandoning a sinking ship and then selling lifebelts to the passengers. Where can I get an assembler for the Coupé? I suppose we'll have to develop our own software and carry out guarantee work next.

You can get an assembler from SAM Computers Ltd at the address given elsewhere on this page. As for software development, Enigma Variations has pledged support for the machine and, even as I write, several titles are under development. There's also the Spectrum emulator, and SAM Computers can arrange guarantee work.

How do I define a numeric variable in SAM BASIC? I've tried using the conventional ways (as in other dialects of BASIC) but have drawn a blank. What is the format and how many characters long may it be?

I'm sure MGT gets pleasure from doing the unexpected. A numeric variable in SAM BASIC can be up to 32 characters long but must start with a letter. After the start letter, the remaining spaces can be made up of letters, underlines and spaces.

I read somewhere that command codes can be accessed to provide most of BASIC's functions. I know how to do this but have no record of which codes tie up with which commands. Can you enlighten me?

According to the technical manual, the codes are as follows:

39	SIN
3A	COS
3B	TAN
3C	ASN
3D	ACS
3E	ATN
3F	LOGN
40	EXP
41	ABS
42	SGN
43	SQR
44	INT
45	USR
46	IN
47	PEEK
48	DPEEK
49	DVAR
4A	SVAR
4B	BUTTON
4C	EOF
4D	PTR
4E	Reserved
4F	UDG
50	NUMBER
51	LEN
52	CODE
53	VAL$
54	VAL
55	TRUNC$
56	CHR$
57	STR$
58	BIN$
59	HEX$
5A	USR$
5B	INKEY$
5C	NOT
5D	NEGATE

SAM peripherals seem to be thin on the ground at the moment. With MGT not existing anymore, where can I get support for my Coupé?

A phone call to Alan Miles revealed that the mailing address for SAM Computers Ltd is: 3 Clevedon Court, Uplands, Swansea SA2 0RG

Miles confirmed that SAM support has taken off in fine order and it's receiving over 100 orders a day. This has enabled it to take on staff and, as well as supporting the existing Coupé owners, Miles said that new owners (post MGT fiasco) were showing support for the product by buying it.

Russ Meyer of distributor Hollington Meyers agreed, saying that Coupés were selling well and that there was support for the machine.

Is there a published table of the Coupé memory map with the approximate memory locations?

The map that you want is on page 27 of the SAM technical manual and looks something like this

FFFF	ROM1 or program, variables or screen
00C00	Program, variables or screen
00800	Start of channels
05CB6	System variables
05A00	Keyboard table
058E0	Def key buffer
05800	Line interrupt colour table
05600	Palette table
055D8	UDG patterns
05490	Character patterns
05190	CHARS
05120	Page allocation
05100	ALLOCT
050FF	Buffer
04F00	Machine stack/Floating point calculator stack
04D00	STKBOT
04C00	FARLDIR buffer
04B50	Tape headers
04B00	BASIC stack
04000	HEAPST

What are the SAM disk drive pin connections for?

The drives in the SAM are Citizen OSDC drives which the SAM disk operating system formats to 780K. The twin 32-way Euroconnectors inside the machine are wired as follows:

1A=0V	1B=WR
2A=0V	2B=A0
3A=0V	3B=A1
4A=0V	4B=D0
5A=0V	5B=D1
6A=0V	6B=D2
7A=0V	7B=D3
8A=0V	8B=D4
9A=0V	9B=D5
10A=0V	10B=D6
11A=5V	11B=D7
12A=5V	12B=8MHz
13A=5V	13B=RST
14A=5V	14B=Not connected
15A=5V	15B=A2
16A=5V	16B=Disk 1 or Disk 2

Drive 1 connection is to the left and Drive 2 to the right as you sit at the keyboard.

Does MIDI work on the Coupé ?

We reported an alleged problem with MIDI on the Coupé some time ago. To date we have only seen a Coupé running a very simple short sequence from a test program. This was played back on a Yamaha PSS series keyboard and benefited from the 'automatic' play facilities of the PSS. Other comments in the computer press saying that the Coupe is MIDI compatible were based on the same demonstration and could be misleading.

In simple terms, to qualify as a MIDI computer there must be software that is able to polyphonically sequence, edit and take on board the data from performance and expression controllers. MIDI is a 16-channel system and to take advantage of it properly, you must be able to assign voices to those channels.

As soon as we are able to obtain a true MIDI sequencer/editor for the Coupé, we'll report further. In the meantime, as there's no proper software, the answer still has to be no, but at least we know that the Coupé is able to squirt data out of the MIDI port now!

We still await a working network for the Coupé too. All those lovely networking ports and no other computers to talk to ... tut tut.

Is there a mouse or lightpen available for the Coupé? (both were promised).

No. The mouse has been shelved for the time being but the lightpen may yet surface again.

In my friend's mag I read that MGT (the people who make the Coupé) had kicked it. I was at the time considering buying a Coupé. Now I don't know whether to go for another computer or buy a Coupé. If I get a Coupé, will I be able to get the hardware/software for it? Also it's been stated it runs 70 per cent of Spectrum software. Does this include disks? Also, how do you tell which games work and which don't?

Below, courtesy of Errington Computers in Sperrymore (a useful source of SAM products), are some of the tape games that work.

A full and comprehensive list of tape and disk games doesn't seem to exist as yet – unless anyone out there knows differently.

Pub Trivia, Buggy Boy, Captain Blood, Barbarian, Impossamole, Rainbow Islands, 4x4 Racing, Leaderboard, Supertrux, Thundercats, Kenny Dalglish, Knight Force, Captain Fizz, Scramble Spirit, Earthlight, Xybots, Hong Kong Phooey, Thomas the Tank Engine, Punch and Judy, Jungle Warfare, Dustcart Simulator, American Turbo King, Billy the Kid, Neoplan the Warrior, Bronx Street Cop, Setra, F16, Wonderboy, Tempest, Spy Vs Spy II, Hopping Mad, Impossible Mission, Count Duckula, Pro-Golf Simulator, Micromouse, Monte Carlo Casino, Turican.

The alignment of the tape heads is critical to the loading of some games, as is the volume level; so be prepared to try out various settings. ■

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- ★ ***RAM:*** 128K with an internal RAM disk, configurable from 8K. Externally expandable to 640K RAM.
- ★ ***Keyboard:*** 63 keys, QWERTY, IBM PC BIOS compatible. Buried numeric pad and function keys. Optional key click.
- ★ ***Character Set:*** Extended IBM ASCII (255 characters).
- ★ ***Mass storage:*** credit card sized memory cards (32K or 64K or 128K RAM).
- ★ ***Display:*** Graphics LCD, supertwist technology, MDA compatible, 40 columns x 8 lines, 240 x 64 pixels (with the option to window a full 80 x 25 character display). Keyboard controlled contrast.
- ★ ***Peripherals:*** 60 pin expansion BUS to take serial and parallel ports and memory expansion units.
- ★ ***Size:*** 8" x 4" x 1" (200mm x 105mm x 29mm).
- ★ ***Weight:*** 495 grammes (with batteries).
- ★ ***Applications:*** calendar and diary, address and phone book, Lotus 1-2-3 compatible spreadsheet, text processor, communications software.

COMING SOON!

In addition to the excellent software built-in to the Portfolio Free of Charge (see right), other software and peripheral products, such as the sophisticated Pocket Finance package and serial/centronics interfaces are available. And it doesn't stop there. Many manufacturers have recognised the potential of the Portfolio and have already started to design new peripherals and software. Products currently under development include: Serial interface with built in mini modem, Apple Macintosh interface, business, utility and programming software plus a range of adventure and battle strategy games. For further free details on the Portfolio range, fill in the coupon below and return it to Silica Systems now.

5 BUILT-IN APPLICATIONS TO GET YOU ORGANISED!

To get you started, Portfolio comes with a suite of five useful functions built-in, all accessible from a simple menu display.

TIME MANAGER

More than just an electronic diary, the Portfolio Time Manager enables you to plan your appointments via a comprehensive calendar and diary. It can even be programmed to sound an audible alarm at specific times to remind you of important appointments.

CALCULATOR

Your Portfolio will be invaluable in the office or at home as a powerful pocket calculator. It has a full range of functions, including factorial, power and root calculations, all with multi display formats and memories.

ADDRESS BOOK & DIALLER

Portfolio has a complete address book facility that allows you to store hundreds of addresses and phone numbers. And, at the touch of a button, you can retrieve any one of them, or search for a specific grouping, such as "all Italian restaurants". And, when you are ready to book your table, hold your Portfolio to your telephone mouthpiece and use its special built-in tone dialler to dial the number for you.

TEXT PROCESSOR

The Portfolio's built-in text processor program includes word wrap, line and column count, string search, in fact most of the functions you would find in a word processor. It handles printer and word processor control codes and allows easy transfer of files between Portfolio and your desktop PC.

SPREADSHEET

For real calculating power, Portfolio has a Lotus 1-2-3 compatible spreadsheet built-in. It has 127 columns x 225 rows and reads/writes Lotus V1.0 and V2.01 files, so you can transfer data to and from Lotus 1-2-3 on your desktop PC. The Portfolio's 256K ROM includes MS-DOS and PC BIOS compatible systems software.

MEMORY CARDS

Portfolio can store and retrieve data and programs from its own RAM, or from small credit card size memory cards, that slot into its built-in card drive. The cards are available in three sizes, 32K, 64K and 128K, so you can carry a library of data in your pocket. The card drive also accepts ROM cards, which can contain commercial or custom software.

POWER SUPPLY

Portfolio is powered by three AA batteries which will run for up to six weeks with normal use, or from the mains using an adaptor. All the peripherals take their power from the Portfolio, so no extra batteries or adaptors are required. A 'battery-low' warning and memory back-up ensure that information is not lost when the batteries are changed.

INTERFACES & PERIPHERALS

Portfolio can communicate with other computers and supports a growing range of peripherals via a built-in 60 pin bus connector. Peripherals available include serial and parallel interfaces and memory expanders (to 640K). You can also add a card drive to your desktop PC, to enable it to read/write to Portfolio's cards.

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Before you decide when to buy your new Atari Portfolio, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after buying your Portfolio, when you may require additional peripherals or software, or help and advice with your new purchase. And, will the company you buy from contact you with details of new Portfolio products? At Silica Systems, we ensure that you will have nothing to worry about. Silica Systems is a new division of Silica Shop, the UK's leading Atari specialists. This new division has been established to provide a service to the more serious home user, as well as to business and education purchasers. Silica have been established for over 12 years, and have an annual turnover of £13 million. With our unrivalled experience and expertise, we can now claim to meet our customers requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now, for our latest Free literature and begin to experience the "Silica Systems Service".

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EXPRESS MAiL

Write and tell us what you think about anything under the Sun! Reach us at: *Express Mail, 30 Monmouth Street, Bath BA1 2BW.* Sorry, no personal replies, even with an SAE, as we're too busy writing the magazine. Replies this week by Keith Pomfret.

■ In the red corner

I have been reading computer mags for weeks wondering what make of computer to purchase. I had all but decided on the Atari 1040STE business pack when, wham bang, you recommend the Amiga 500 in this week's *New Computer Express.* Why does the Amiga win by a long head please?

I want a word processor, possibly *Protext*, a DTP program plus games availability – but majoring on business software for home use.

What makes the Amiga special? I look forward to your reply.

C Day, Greenford, Middlesex

The Amiga multi-tasks as a matter of course. It has a far superior specification, doesn't rely on the same sound chip as -bits and old arcade machines, can do back flips, somersaults, bake a cake, fly an aircraft and is generally a more desirable acquisition.

Page Setter II, Protext and all the best games with the best sounds and graphics, more potential to expand... need I say any more? Then again if you've got real cash burning a hole in your pocket you could always buy an Archimedes, (the A3000 Learning Curve pack looks tasty).

■ Boxing clever

After reading of Phillip Cole's idea of economical 3-inch disk storage in *Express* 93, I feel the man could do with some advice.

A second-hand oak wardrobe (£7.45 from any good Age Concern shop) will hold 4,456 (cased) or 8,937 (uncased) disks, and there is often a little drawer in which to store your collection of missing address marks. I have two and I cannot get into the room, thus saving electricity, my eyesight and wear-and-tear.

I think you will agree that, worked out as a price-per-disk storage rate, this represents a significant improvement in value for money on Mr Cole's CD box and, while pedants would note that an oak wardrobe may not be as portable as a CD box, I would respectfully suggest that only a ninny would want to carry 4,456 (cased) or 8,937 (uncased) disks around with him, anyway.

H Jorgans, Prestwich, Manchester

While we're grateful for your ideas you were in fact pipped to the post by our research and development team who have solved the portability problem with adjustable racking in a Bedford pantechnicon. This movable disk box can hold in excess of 30,000 5.25-inch disks or proportionally more of the 3- or 3.5-inch disks.

■Star spangled blather

As usual, those given to parroting socialist catch phrases in your pages simultaneously reveal a total misunderstanding of the issue on which they comment.

Steve Carey's assertion that the low prices of ST add-ons is due to the weakness of the pound, is wrong on two counts: A, the pound is stronger at the moment than it has been for years, being worth almost two US dollars as I write, and B, a weak pound would of course cause imported items to cost more, not less.

Part of the recently plummeting cost of computers and related items is indeed due to currency movements; the pound sterling having gained value against all other currencies in the last few months, including the dollar, yen, and Deutchmark. By all means 'blame' Mrs Thatcher for this.

Iolo Davidson, Tetbury, Gloucestershire

Just when we thought Iolo had leapt on the plane with his countrymen and flown off to the Gulf, he leaps from the bushes and attacks one of our columnists with all the skill and determination of the Fifth Airborne.

Wouldn't it have been more gentlemanly to point out a man's mistake in a private letter instead of a public forum or is that how things are still done in the colonies?

■ Staircase snobbery

I recently upgraded my computer from an Atari ST to an Amiga. Why I did this has no real relevance. However, in just the few weeks I have owned this machine, I have noticed something remarkable.

Let me explain. When I had a Spectrum, we 'Speccies' always went out of our way to say that 'our' machine was better than the C64. When I moved up to the Atari St a few years ago, all Atarians went out of their way to compare it favourably against the Amiga.

Now what I've discovered is that most Amiga people give the Mac a very hard time but hardly ever say anything about the ST. Odd, isn't it? Odd how the 'lesser' computers only slag down those that are just a bit better than their own.

So, just to add fuel to the fire, I think that we can safely say that Amigas are better than STs, which in turn are better than C64s which in turn are better than Spectrums. Oh yes, just 'cause I own an Amoeba doesn't mean I think it's the best thing since sliced bread. If I had one and a half grand lying around I would buy a second hand Vax, but then I'd have to put up with HP and IBM users slagging me off.

S Waldron, Kings Lynn, Norfolk.

But then there are always the Macintosh users who have nothing to aspire to and therefore nothing to slag off, (or so they tell me).

■ Tough at the top

Being an Archimedes owner is tough! You know you've got a great machine but owners of lesser machines won't take you seriously – "Yeah, its a great shame there's no software for it".

Well, although quantity of commercial is lesser than 'those' machines, it is rapidly increasing and quality is without question! But I've found a source of excellent software (68Mb!), and many people willing to help in any computer matters, be it programming, DTP, RISC-OS or whatever. The source is of course bulletin boards and the two I use constantly are:

NOAH – 0272 572322

CRYTON – 0749 679794 or 0749 670030

The range of software, and the sheer number of people willing to help is fantastic! So if you've got an Arc, no software and no friends, buy a modem! The only down side to all this is Mr BT makes a packet, but one eye on the screen the other on the clock and you should be OK. Long live the Arc and long live the ever supportive BBSs.

M Hula, Fishponds, Bristol

We couldn't agree more. Assuming that the A3000 and its big brother the Archimedes get the software support that they deserve, it could only be a matter of time before all the ST owners have saved up and bought Amigas, the Amiga owners have bought A3000s and the Archimedes owners are saying "Told You So!"

■ White rabbit

Harvey Kennet's idea that the 8-bitters are holding up advances in computer technology is complete balderdash. The group of people guilty of this are the fools who believe consoles to be infantile machines unworthy of a mention in *New Computer Express*!

OK, a console isn't strictly speaking a computer! You can't do most of the things that you'd usually expect to be able to use a computer for, such as word processing, programming, DTP etc.

However, much as we hate to admit it, some of the games consoles can easily outstep even the most advanced of the home computers!

R Morris, Sutton Coldfield, West Midlands.

Point taken. Some of the consoles are indeed fine graphics engines, with the ability to out play dedicated computers but of limited use other than for simple entertainment. ■

NEXT WEEK

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The Amiga 3000 and the new version of Workbench

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Looking forward to the Computer Entertainment Show

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The Commodore A500 Batman Pack must surely rank as one of the most popular computer packs ever! The pack features the **Commodore Amiga 500 computer** with **mouse controller** and **TV modulator**, plus four top software titles. The software includes: **'Batman The Movie'** - Rid Gotham City of the cunning joker, in Ocean's top selling title based on the blockbuster Batman film; **New Zealand Story** - high quality conversion of the leading arcade game; **Interceptor** - Dogfight with two F-16's in this leading flight simulator; **Deluxe Paint II** - top quality Amiga graphics package which set the standard for others to follow. Return the coupon for further details.

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For the more serious or professional applications user, Commodore have a selection of systems based around the expandable Amiga 2000, at prices from £1295+VAT. The A2000 features a full 1Mb RAM (expandable to 9Mb), 9 system expansion slots, plus IBM compatibility with the use of PC-XT or PC-AT bridgeboards. Complete and return the coupon, putting a tick in the A2000 box, for details of A2000 computer systems.

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Slip on your magic shoes, practise throwing a rainbow and you're ready to go island hopping. From the Island of Doh to Monster Island, you will encounter Doh himself, stinging insects, lethal combat machines, mechanical assailants, the formidable beings of legend and folklore. Finally enter the world of darkness and its inhabitants.

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